SEQUENCE LISTING

<110> Gerlach, [unclear] L
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Padigaru, Muralidhara
Kekuda, Ramesh
Spytek, Kimberly A
Leach, Martin D
Shimkets, Richard A

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Tyr Gly His Lys Thr Thr His His Thr Thr Glu Arg Pro Ser Ala Ser
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Leu Tyr Glu Gln His Met Val Ser Pro Met Val His Val Tyr Arg Ser
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Pro Ser Phe Gly Pro Lys His Leu Glu Glu Glu Glu Arg Asn Glu
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Lys Glu Gly Ser Asp Ala Lys His Leu Gln Arg Ser Leu Leu Glu Gln
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Glu Asn His Ser Pro Leu Thr Gly Ser Asn Met Lys Tyr Lys Thr Thr
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Asn Gln Ser Thr Glu Phe Leu Ser Phe Gln Asp Ala Ser Ser Leu Tyr
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Arg Asn Ile Leu Glu Lys Glu Arg Glu Leu Gln Gln Leu Gly Ile Thr
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Glu Tyr Leu Arg Lys Asn Ile Ala Gln Leu Gln Pro Asp Met Glu Ala
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His Tyr Pro Gly Ala His Glu Glu Leu Lys Leu Met Glu Thr Leu Met
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Tyr Ser Arg Pro Arg Lys Val Leu Val Glu Gln Thr Lys Asn Glu Tyr
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Gln Cys Gln His Cys Gln Gly Arg Phe Arg Leu Thr Glu Pro Ser Gly
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Tyr Leu Thr Asp Gly Pro Ile Asn Tyr Lys Tyr Lys Thr Lys Cys Thr
65                  70                  75                  80

Trp Leu Ile Glu Gly Pro Asn Ala Val Leu Arg Leu Arg Phe Asn His
                85                  90                  95

Phe Ala Thr Glu Cys Ser Trp Asp His Met Tyr Val Tyr Asp Gly Asp
            100                 105                 110

Ser Ile Tyr Ala Pro Leu Ile Ala Ser Phe Ser Gly Leu Ile Val Pro
            115                 120                 125

Glu Ile Arg Gly Asn Glu Thr Val Pro Glu Val Val Thr Thr Ser Gly
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Tyr Ala Leu Leu His Phe Phe Ser Asp Ala Ala Tyr Asn Leu Thr Gly
145                 150                 155                 160

Phe Asn Ile Phe Tyr Ser Ile Asn Ser Cys Pro Asn Asn Cys Ser Gly
                165                 170                 175

His Gly Lys Cys Thr Thr Ser Val Ser Val Pro Ser Gln Val Tyr Cys
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Glu Cys Asp Lys Tyr Trp Lys Gly Glu Ala Cys Asp Ile Pro Tyr Cys
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Lys Ala Asn Cys Gly Ser Pro Asp His Gly Tyr Cys Asp Leu Thr Gly
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Glu Lys Leu Cys Val Cys Asn Asp Ser Trp Gln Gly Ile Gly Pro Asp
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Cys Ser Leu Asn Val Pro Ser Thr Glu Ser Tyr Trp Ile Leu Pro Asn
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Ser Ser Phe Gln Met Val Leu Ser Tyr Asn Leu Glu Ser Ser Ile Trp
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Asn Val Gly Thr Pro Ser Arg Gly Pro Leu Gln Arg Tyr Gly His Ser
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Leu Ala Leu Tyr Gln Glu Asn Ile Phe Met Tyr Gly Gly Arg Ile Glu
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Thr Asn Asp Gly Asn Val Thr Asp Glu Leu Trp Val Phe Asn Ile His
            340             345             350

Ser Gln Ser Trp Ser Thr Lys Thr Pro Thr Val Leu Gly His Gly Gln
            355             360             365

Gln Tyr Ala Val Glu Gly His Ser Ala His Ile Met Glu Leu Asp Ser
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Arg Asp Val Val Met Ile Ile Ile Phe Gly Tyr Ser Ala Ile Tyr Gly
385             390             395             400

Tyr Thr Ser Ser Ile Gln Glu Tyr His Ile Cys Ser Asn Thr Trp Leu
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Val Pro Glu Thr Lys Gly Ala Ile Val Gln Gly Gly Tyr Gly His Thr
            420             425             430

Ser Val Tyr Asp Glu Ile Thr Lys Ser Ile Tyr Val His Gly Gly Tyr
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Lys Ala Leu Pro Gly Asn Lys Tyr Gly Leu Val Asp Asp Leu Tyr Lys
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Tyr Glu Val Asn Thr Lys Thr Trp Thr Ile Leu Lys Glu Ser Gly Phe
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Ala Arg Tyr Leu His Ser Ala Val Leu Ile Asn Gly Ala Met Leu Ile
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Phe Gly Gly Asn Thr His Asn Asp Thr Ser Leu Ser Asn Gly Ala Lys
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Cys Phe Ser Ala Asp Phe Leu Ala Tyr Asp Ile Cys Pro Gly Trp Ser
            515             520             525

Ala Val Ala Arg Ser Gln Leu Thr Ala Thr Ser Thr Ser His Val Gln
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Ala Ile Leu Asn Arg Ser Met Tyr Ile Phe Gly Gly Phe Ser Ser Val
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13

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Ile Leu Arg Ala Lys Cys Phe Ser Lys Arg Asn Leu Cys Ser Asp Arg
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Cys Tyr Arg Tyr Ala Asp Cys Ala Ser Cys Thr Ala Asn Thr Asn Gly
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Cys Gln Trp Cys Asp Asp Lys Lys Cys Ile Ser Ala Asn Ser Asn Cys
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Ser Met Val Ser Ile Phe Gly Tyr Ile Thr Leu Pro Ser Gln Phe Pro
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Phe Tyr Tyr Cys Tyr Arg Tyr Ala Asp Cys Ala Ser Cys Thr Ala Asn
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Thr Asn Gly Cys Gln Trp Cys Asp Asp Lys Lys Cys Ile Ala Leu Pro
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Ala His Leu Cys Gly Glu Gly Trp Ser His Ile Gly Asp Ala Cys Leu
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Arg Val Asn Ser Ser Arg Glu Asn Tyr Asp Asn Ala Lys Leu Tyr Cys
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Tyr Asn Leu Ser Gly Asn Leu Ala Ser Leu Thr Thr Ser Lys Glu Val
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Glu Phe Val Leu Asp Glu Ile Gln Lys Tyr Thr Gln Gln Lys Val Ser
            755             760             765

Pro Trp Val Gly Leu Arg Lys Ile Asn Ile Ser Tyr Trp Gly Trp Glu
    770             775             780

Asp Met Ser Pro Phe Thr Asn Thr Thr Leu Gln Trp Leu Pro Gly Glu
785             790             795             800

Pro Asn Asp Ser Gly Phe Cys Ala Tyr Leu Glu Arg Ala Ala Val Ala
            805             810             815

Gly Leu Lys Ala Asn Pro Cys Thr Ser Met Ala Asn Gly Leu Val Cys
            820             825             830

Glu Lys Pro Val Asn Gln Asn Ala Arg Pro Cys Lys Lys Pro Cys Ser
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Leu Arg Thr Ser Cys Ser Asn Cys Thr Ser Asn Gly Met Glu Cys Met
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Ser Phe Pro Tyr Gly Gln Cys Leu Glu Trp Gln Thr Ala Thr Cys Ser
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Arg Ala Gln Asn Cys Ser Gly Leu Arg Thr Cys Gly Gln Cys Leu Glu
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Gln Pro Glu Cys Gly Trp Cys Asn Asp Pro Ser Asn Thr Gly Arg Gly
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His Cys Ile Glu Gly Ser Ser Arg Gly Pro Met Lys Leu Ile Gly Met
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His His Ser Glu Met Val Leu Asp Thr Asn Leu Cys Pro Lys Glu Lys
945             950             955             960

Asn Tyr Glu Trp Ser Phe Ile Gln Cys Pro Ala Cys Gln Cys Asn Gly
            965             970             975

His Ser Thr Cys Ile Asn Asn Asn Val Cys Glu Gln Cys Lys Asn Leu
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Thr Thr Gly Lys Gln Cys Gln Asp Cys Met Pro Gly Tyr Tyr Gly Asp
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Pro Thr Asn Gly Gly Gln Cys Thr Ala Cys Thr Cys Ser Gly His Ala
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Asn Ile Cys His Leu His Thr Gly Lys Cys Phe Cys Thr Thr Lys Gly
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Ile Lys Gly Asp Gln Cys Gln Leu Cys Asp Ser Glu Asn Arg Tyr Val
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Gly Asn Pro Leu Arg Gly Thr Cys Tyr Cys Lys Tyr Ser Leu Leu Ile
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Asp Tyr Gln Phe Thr Phe Ser Leu Leu Gln Glu Asp Asp Arg His His
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Thr Ala Ile Asn Phe Ile Ala Asn Pro Glu Gln Val Arg Lys Asn Leu
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Asp Ile Ser Ile Asn Ala Ser Asn Asn Phe Asn Leu Asn Ile Thr Trp
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Ser Val Gly Ser Ala Gly Thr Ile Ser Gly Glu Glu Thr Ser Ile Val
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Ser Lys Asn Asn Ile Lys Glu Tyr Arg Asp Ser Phe Ser Tyr Glu Lys
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Phe Asn Phe Arg Ser Asn Pro Asn Ile Thr Phe Tyr Val Tyr Val Ser
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Glu Gly Ile Leu Asp Ala Leu Phe Val Leu Phe Glu Glu Cys Ser Gln
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Pro Ala Leu Met Lys Ile Lys His Val Ser Asn Phe Val Arg Lys Cys
65                  70                  75                  80

Ser Asp Thr Ile Ala Glu Leu Gln Glu Leu Gln Pro Ser Ala Lys Asp
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Phe Glu Val Arg Ser Leu Val Gly Cys Gly His Phe Ala Glu Val Gln
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Val Val Arg Glu Lys Ala Thr Gly Asp Ile Tyr Ala Met Lys Val Met
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Lys Lys Lys Ala Leu Leu Ala Gln Glu Gln Val Ser Phe Phe Glu Glu
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Glu Arg Asn Ile Leu Ser Arg Ser Thr Ser Pro Trp Ile Pro Gln Leu
145                 150                 155                 160

Gln Tyr Ala Phe Gln Asp Lys Asn His Leu Tyr Leu Val Met Glu Tyr
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Gln Pro Gly Gly Asp Leu Leu Ser Leu Leu Asn Arg Tyr Glu Asp Gln
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Leu Asp Glu Asn Leu Ile Gln Phe Tyr Leu Ala Glu Leu Ile Leu Ala
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225                 230                 235                 240
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18

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Ile Gly Thr Pro Asp Tyr Met Ala Pro Glu Val Leu Thr Val Met Asn
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Gly Asp Gly Lys Gly Thr Tyr Gly Leu Asp Cys Asp Trp Trp Ser Val
        275             280             285

Gly Val Ile Ala Tyr Glu Met Ile Tyr Gly Arg Ser Pro Phe Ala Glu
    290             295               300

Gly Thr Ser Ala Arg Thr Phe Asn Asn Ile Met Asn Phe Gln Arg Phe
305             310             315                   320

Leu Lys Phe Pro Asp Asp Pro Lys Val Ser Ser Asp Phe Leu Asp Leu
            325             330                   335

Ile Gln Ser Leu Leu Cys Gly Gln Lys Glu Arg Leu Lys Phe Glu Gly
            340             345               350

Leu Cys Cys His Pro Phe Phe Ser Lys Ile Asp Trp Asn Asn Ile Arg
        355             360         ·       365

Asn Ala Pro Pro Pro Phe Val Pro Thr Leu Lys Ser Asp Asp Asp Thr
    370             375               380

Ser Asn Phe Asp Glu Pro Glu Lys Asn Ser Trp Val Ser Ser Ser Pro
385             390             395               400

Cys Gln Leu Ser Pro Ser Gly Phe Ser Gly Glu Glu Leu Pro Phe Val
            405             410                   415

Gly Phe Ser Tyr Ser Lys Ala Leu Gly Ile Leu Gly Arg Ser Glu Ser
        420             425             430

Val Val Ser Gly Leu Asp Ser Pro Ala Lys Thr Ser Ser Met Glu Lys
        435             440               445

Lys Leu Leu Ile Lys Ser Lys Glu Leu Gln Asp Ser Gln Asp Lys Cys
    450             455             460

His Lys Met Glu Gln Glu Met Thr Arg Leu His Arg Arg Val Ser Glu
465             470             475                   480

Val Glu Ala Val Leu Ser Gln Lys Glu Val Glu Leu Lys Ala Ser Glu
            485             490               495

Thr Gln Arg Ser Leu Leu Glu Gln Asp Leu Ala Thr Tyr Ile Thr Glu
            500             505               510

Cys Ser Ser Leu Lys Arg Ser Leu Glu Gln Ala Arg Met Glu Val Ser
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Gln Glu Asp Asp Lys Ala Leu Gln Leu Leu His Asp Ile Arg Glu Gln
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Glu Glu Met Arg Leu Met Met Asn Gln Leu Glu Glu Asp Leu Val Ser
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Ala Arg Arg Arg Ser Asp Leu Tyr Glu Ser Glu Leu Arg Glu Ser Arg
            580   585   590

Leu Ala Ala Glu Glu Phe Lys Arg Lys Ala Thr Glu Cys Gln His Lys
        595   600   605

Leu Leu Lys Ala Lys Asp Gln Gly Lys Pro Glu Val Gly Glu Tyr Ala
    610   615   620

Lys Leu Glu Lys Ile Asn Ala Glu Gln Gln Leu Lys Ile Gln Glu Leu
625   630   635   640

Gln Glu Lys Leu Glu Lys Ala Val Lys Ala Ser Thr Glu Ala Thr Glu
            645   650   655

Leu Leu Gln Asn Ile Arg Gln Ala Lys Glu Arg Ala Glu Arg Glu Leu
            660   665   670

Glu Lys Leu Gln Asn Arg Glu Asp Ser Ser Glu Gly Ile Arg Lys Lys
    675   680   685

Leu Val Glu Ala Glu Glu Arg Arg His Ser Leu Glu Asn Lys Val Lys
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Arg Leu Glu Thr Met Glu Arg Arg Glu Asn Arg Leu Lys Asp Asp Ile
705   710   715   720

Gln Thr Lys Ser Gln Gln Ile Gln Gln Met Ala Asp Lys Ile Leu Glu
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Leu Glu Glu Lys His Arg Glu Ala Gln Val Ser Ala Gln His Leu Glu
            740   745   750

Val His Leu Lys Gln Lys Glu Gln His Tyr Glu Glu Lys Ile Lys Val
    755   760   765

Leu Asp Asn Gln Ile Lys Lys Asp Leu Ala Asp Lys Glu Thr Leu Glu
    770   775   780

Asn Met Met Gln Arg His Glu Glu Glu Ala His Glu Lys Gly Lys Ile
785   790   795   800

Leu Ser Glu Gln Lys Ala Met Ile Asn Ala Met Asp Ser Lys Ile Arg
            805   810   815

Ser Leu Glu Gln Arg Ile Val Glu Leu Ser Glu Ala Asn Lys Leu Ala
            820   825   830

Ala Asn Ser Ser Leu Phe Thr Gln Arg Asn Met Lys Ala Gln Glu Glu
        835   840   845

20

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Ile Ser His Gln Asp His Ser Asp Lys Asn Arg Leu Leu Glu Leu Glu
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Thr Arg Leu Arg Glu Val Ser Leu Glu His Glu Glu Gln Lys Leu Glu
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Leu Lys Arg Gln Leu Thr Glu Leu Gln Leu Ser Leu Gln Glu Arg Glu
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Ser Gln Leu Thr Ala Leu Gln Ala Ala Arg Ala Ala Leu Glu Ser Gln
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Leu Arg Gln Ala Lys Thr Glu Leu Glu Glu Thr Thr Ala Glu Ala Glu
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Glu Glu Ile Gln Ala Leu Thr Ala His Arg Asp Glu Ile Gln Arg Lys
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Phe Tyr Leu Ser Lys Gln Leu Asp Glu Ala Ser Gly Ala Asn Asp Glu
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Ile Val Gln Leu Arg Ser Glu Val Asp His Leu Arg Arg Glu Ile Thr
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Glu Arg Glu Met Gln Leu Thr Ser Gln Lys Gln Thr Met Glu Ala Leu
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Lys Thr Thr Cys Thr Met Leu Glu Glu Gln Val Met Asp Leu Glu Ala
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Leu Asn Asp Glu Leu Leu Glu Lys Glu Arg Gln Trp Glu Ala Trp Arg
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Ser Val Leu Gly Asp Glu Lys Ser Gln Phe Glu Cys Arg Val Arg Glu
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Leu Gln Arg Met Leu Asp Thr Glu Lys Gln Ser Arg Ala Arg Ala Asp
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Gln Arg Ile Thr Glu Ser Arg Gln Val Val Glu Leu Ala Val Lys Glu
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His Lys Ala Glu Ile Leu Ala Leu Gln Gln Ala Leu Lys Glu Gln Lys
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21

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Thr Glu Arg Glu Leu Lys Gln Arg Leu Leu Glu Glu Gln Ala Lys Leu
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Gln Gln Gln Met Asp Leu Gln Lys Asn His Ile Phe Arg Leu Thr Gln
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Gly Leu Gln Glu Ala Leu Asp Arg Ala Asp Leu Leu Lys Thr Glu Arg
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Ser Asp Leu Glu Tyr Gln Leu Glu Asn Ile Gln Val Leu Tyr Ser His
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Glu Lys Val Lys Met Glu Gly Thr Ile Ser Gln Gln Thr Lys Leu Ile
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Asp Phe Leu Gln Ala Lys Met Asp Gln Pro Ala Lys Lys Lys Lys Val
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Pro Leu Gln Tyr Asn Glu Leu Lys Leu Ala Leu Glu Lys Glu Lys Ala
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Arg Cys Ala Glu Leu Glu Glu Ala Leu Gln Lys Thr Arg Ile Glu Leu
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Arg Ser Ala Arg Glu Glu Ala Ala His Arg Lys Ala Thr Asp His Pro
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His Pro Ser Thr Pro Ala Thr Ala Arg Gln Gln Ile Ala Met Ser Ala
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Ile Val Arg Ser Pro Glu His Gln Pro Ser Ala Met Ser Leu Leu Ala
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Pro Pro Ser Ser Arg Arg Lys Glu Ser Ser Thr Pro Glu Glu Phe Ser
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Arg Arg Leu Lys Glu Arg Met His His Asn Ile Pro His Arg Phe Asn
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Val Gly Leu Asn Met Arg Ala Thr Lys Cys Ala Val Cys Leu Asp Thr
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Val His Phe Gly Arg Gln Ala Ser Lys Cys Leu Glu Cys Gln Val Met
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Cys His Pro Lys Cys Ser Thr Cys Leu Pro Ala Thr Cys Gly Leu Pro
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Glu Gly Trp Met Lys Val Pro Arg Asn Asn Lys Arg Gly Gln Gln Gly
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Trp Asp Arg Lys Tyr Ile Val Leu Glu Gly Ser Lys Val Leu Ile Tyr
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Ser Glu Leu Ala Asn Thr Ala Lys Ala Asp Val Pro Tyr Ile Leu Lys
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Met Glu Ser His Pro His Thr Thr Cys Trp Pro Gly Arg Thr Leu Tyr
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Leu Leu Ala Pro Ser Phe Pro Asp Lys Gln Arg Trp Val Thr Ala Leu
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Glu Ser Val Val Ala Gly Gly Arg Val Ser Arg Glu Lys Ala Glu Ala
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Arg Leu Asp Met Asn Cys Thr Leu Pro Phe Ser Asp Gln Val Val Leu
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Val Gly Thr Glu Glu Gly Leu Tyr Ala Leu Asn Val Leu Lys Asn Ser
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Lys Asp Leu Glu Lys Leu Leu Met Ile Ala Gly Glu Glu Arg Ala Leu
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Gly Cys His Leu Phe Gly Ala Gly Lys Ile Glu Asn Gly Leu Cys Ile
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Cys Ala Ala Met Pro Ser Lys Val Val Ile Leu Arg Tyr Asn Glu Asn
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Leu Ser Lys Tyr Cys Ile Arg Lys Glu Ile Glu Thr Ser Glu Pro Cys
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23

Ser Cys Ile His Phe Thr Asn Tyr Ser Ile Leu Ile Gly Thr Asn Lys
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Phe Tyr Glu Ile Asp Met Lys Gln Tyr Thr Leu Glu Glu Phe Leu Asp
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Lys Asn Asp His Ser Leu Ala Pro Ala Val Phe Ala Ala Ser Ser Asn
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Ser Phe Pro Val Ser Ile Val Gln Val Asn Ser Ala Gly Gln Arg Glu
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Glu Tyr Leu Leu Cys Phe His Glu Phe Gly Val Phe Val Asp Ser Tyr
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Ala Phe Ala Tyr Arg Glu Pro Tyr Leu Phe Val Thr His Phe Asn Ser
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Leu Glu Val Ile Glu Ile Gln Ala Arg Ser Ser Ala Gly Thr Pro Ala
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Arg Ala Tyr Leu Asp Ile Pro Asn Pro Arg Tyr Leu Gly Pro Ala Ile
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Ser Ser Gly Ala Ile Tyr Leu Ala Ser Ser Tyr Gln Asp Lys Leu Arg
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Val Ile Cys Cys Lys Gly Asn Leu Val Lys Glu Ser Gly Thr Glu His
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His Arg Gly Pro Ser Thr Ser Arg Ser Ser Pro Asn Lys Arg Gly Pro
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Pro Thr Tyr Asn Glu His Ile Thr Lys Arg Val Ala Ser Ser Pro Ala
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Glu Gly Ile Leu Asp Ala Leu Phe Val Leu Phe Glu Glu Cys Ser Gln
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Pro Ala Leu Met Lys Ile Lys His Val Ser Asn Phe Val Arg Lys Cys
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Ser Asp Thr Ile Ala Glu Leu Gln Glu Leu Gln Pro Ser Ala Lys Asp
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Phe Glu Val Arg Ser Leu Val Gly Cys Gly His Phe Ala Glu Val Gln
            100   105   110

Val Val Arg Glu Lys Ala Thr Gly Asp Ile Tyr Ala Met Lys Val Met
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Lys Lys Lys Ala Leu Leu Ala Gln Glu Gln Val Ser Phe Phe Glu Glu
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Glu Arg Asn Ile Leu Ser Arg Ser Thr Ser Pro Trp Ile Pro Gln Leu
145   150   155   160

Gln Tyr Ala Phe Gln Asp Lys Asn His Leu Tyr Leu Val Met Glu Tyr
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Gln Pro Gly Gly Asp Leu Leu Ser Leu Leu Asn Arg Tyr Glu Asp Gln
            180   185   190

Leu Asp Glu Asn Leu Ile Gln Phe Tyr Leu Ala Glu Leu Ile Leu Ala
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Val His Ser Val His Leu Met Gly Tyr Val His Arg Asp Ile Lys Pro
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Glu Asn Ile Leu Val Asp Arg Thr Gly His Ile Lys Leu Val Asp Phe
225   230   235   240

Gly Ser Ala Ala Lys Met Asn Ser Asn Lys Val Asn Ala Lys Leu Pro
            245   250   255

Ile Gly Thr Pro Asp Tyr Met Ala Pro Glu Val Leu Thr Val Met Asn

27

Gly Asp Gly Lys Gly Thr Tyr Gly Leu Asp Cys Asp Trp Trp Ser Val
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Gly Val Ile Ala Tyr Glu Met Ile Tyr Gly Arg Ser Pro Phe Ala Glu
    290   295   300

Gly Thr Ser Ala Arg Thr Phe Asn Asn Ile Met Asn Phe Gln Arg Phe
305   310   315   320

Leu Lys Phe Pro Asp Asp Pro Lys Val Ser Ser Asp Phe Leu Asp Leu
            325   330   335

Ile Gln Ser Leu Leu Cys Gly Gln Lys Glu Arg Leu Lys Phe Glu Gly
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Leu Cys Cys His Pro Phe Phe Ser Lys Ile Asp Trp Asn Asn Ile Arg
        355   360   365

Asn Ala Pro Pro Pro Phe Val Pro Thr Leu Lys Ser Asp Asp Asp Thr
    370   375   380

Ser Asn Phe Asp Glu Pro Glu Lys Asn Ser Trp Val Ser Ser Ser Pro
385   390   395   400

Cys Gln Leu Ser Pro Ser Gly Phe Ser Gly Glu Glu Leu Pro Phe Val
            405   410   415

Gly Phe Ser Tyr Ser Lys Ala Leu Gly Ile Leu Gly Arg Ser Glu Ser
        420   425   430

Val Val Ser Gly Leu Asp Ser Pro Ala Lys Thr Ser Ser Met Glu Lys
        435   440   445

Lys Leu Leu Ile Lys Ser Lys Glu Leu Gln Asp Ser Gln Asp Lys Cys
    450   455   460

His Lys Met Glu Gln Glu Met Thr Arg Leu His Arg Arg Val Ser Glu
465   470   475   480

Val Glu Ala Val Leu Ser Gln Lys Glu Val Glu Leu Lys Ala Ser Glu
            485   490   495

Thr Gln Arg Ser Leu Leu Glu Gln Asp Leu Ala Thr Tyr Ile Thr Glu
        500   505   510

Cys Ser Ser Leu Lys Arg Ser Leu Glu Gln Ala Arg Met Glu Val Ser
        515   520   525

Gln Glu Asp Asp Lys Ala Leu Gln Leu Leu His Asp Ile Arg Glu Gln
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Ser Arg Lys Leu Gln Glu Ile Lys Glu Gln Glu Tyr Gln Ala Gln Val
545   550   555   560

Glu Glu Met Arg Leu Met Met Asn Gln Leu Glu Glu Asp Leu Val Ser

Ala Arg Arg Arg Ser Asp Leu Tyr Glu Ser Glu Leu Arg Glu Ser Arg
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Leu Ala Ala Glu Glu Phe Lys Arg Lys Ala Thr Glu Cys Gln His Lys
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Lys Leu Glu Lys Ile Asn Ala Glu Gln Gln Leu Lys Ile Gln Glu Leu
625   630   635   640

Gln Glu Lys Leu Glu Lys Ala Val Lys Ala Ser Thr Glu Ala Thr Glu
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Leu Leu Gln Asn Ile Arg Gln Ala Lys Glu Arg Ala Glu Arg Glu Leu
            660   665   670

Glu Lys Leu Gln Asn Arg Glu Asp Ser Ser Glu Gly Ile Arg Lys Lys
        675   680   685

Leu Val Glu Ala Glu Glu Arg Arg His Ser Leu Glu Asn Lys Val Lys
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Arg Leu Glu Thr Met Glu Arg Arg Glu Asn Arg Leu Lys Asp Asp Ile
705   710   715   720

Gln Thr Lys Ser Gln Gln Ile Gln Gln Met Ala Asp Lys Ile Leu Glu
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Leu Glu Glu Lys His Arg Glu Ala Gln Val Ser Ala Gln His Leu Glu
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Val His Leu Lys Gln Lys Glu Gln His Tyr Glu Glu Lys Ile Lys Val
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Leu Asp Asn Gln Ile Lys Lys Asp Leu Ala Asp Lys Glu Thr Leu Glu
770   775   780

Asn Met Met Gln Arg His Glu Glu Glu Ala His Glu Lys Gly Lys Ile
785   790   795   800

Leu Ser Glu Gln Lys Ala Met Ile Asn Ala Met Asp Ser Lys Ile Arg
            805   810   815

Ser Leu Glu Gln Arg Ile Val Glu Leu Ser Glu Ala Asn Lys Leu Ala
            820   825   830

Ala Asn Ser Ser Leu Phe Thr Gln Arg Asn Met Lys Ala Gln Glu Glu
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Met Ile Ser Glu Leu Arg Gln Gln Lys Phe Tyr Leu Glu Thr Gln Ala
        850   855   860

Gly Lys Leu Glu Ala Gln Asn Arg Lys Leu Glu Glu Gln Leu Glu Lys

29

Ile Ser His Gln Asp His Ser Asp Lys Asn Arg Leu Leu Glu Leu Glu
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Thr Arg Leu Arg Glu Val Ser Leu Glu His Glu Glu Gln Lys Leu Glu
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Leu Lys Arg Gln Leu Thr Glu Leu Gln Leu Ser Leu Gln Glu Arg Glu
                915   920   925

Ser Gln Leu Thr Ala Leu Gln Ala Ala Arg Ala Ala Leu Glu Ser Gln
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Leu Arg Gln Ala Lys Thr Glu Leu Glu Glu Thr Thr Ala Glu Ala Glu
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Glu Glu Ile Gln Ala Leu Thr Ala His Arg Asp Glu Ile Gln Arg Lys
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Phe Asp Ala Leu Arg Asn Ser Cys Thr Val Ile Thr Asp Leu Glu Glu
                980   985   990

Gln Leu Asn Gln Leu Thr Glu Asp Asn Ala Glu Leu Asn Asn Gln Asn
        995   1000   1005

Phe Tyr Leu Ser Lys Gln Leu Asp Glu Ala Ser Gly Ala Asn Asp Glu
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Ile Val Gln Leu Arg Ser Glu Val Asp His Leu Arg Arg Glu Ile Thr
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Glu Arg Glu Met Gln Leu Thr Ser Gln Lys Gln Thr Met Glu Ala Leu
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Lys Thr Thr Cys Thr Met Leu Glu Glu Gln Val Met Asp Leu Glu Ala
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Leu Asn Asp Glu Leu Leu Glu Lys Glu Arg Gln Trp Glu Ala Trp Arg
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Ser Val Leu Gly Asp Glu Lys Ser Gln Phe Glu Cys Arg Val Arg Glu
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Leu Gln Arg Met Leu Asp Thr Glu Lys Gln Ser Arg Ala Arg Ala Asp
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Gln Arg Ile Thr Glu Ser Arg Gln Val Val Glu Leu Ala Val Lys Glu
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His Lys Ala Glu Ile Leu Ala Leu Gln Gln Ala Leu Lys Glu Gln Lys
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His Ala Met Leu Glu Met Asn Ala Arg Ser Leu Gln Gln Lys Leu Glu

Thr Glu Arg Glu Leu Lys Gln Arg Leu Leu Glu Glu Gln Ala Lys Leu
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Gly Leu Gln Glu Ala Leu Asp Arg Ala Asp Leu Leu Lys Thr Glu Arg
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Ser Asp Leu Glu Tyr Gln Leu Glu Asn Ile Gln Val Leu Tyr Ser His
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Glu Lys Val Lys Met Glu Gly Thr Ile Ser Gln Gln Thr Lys Leu Ile
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Asp Phe Leu Gln Ala Lys Met Asp Gln Pro Ala Lys Lys Lys Lys Val
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Pro Leu Gln Tyr Asn Glu Leu Lys Leu Ala Leu Glu Lys Glu Lys Ala
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Arg Ser Ala Arg Glu Glu Ala Ala His Arg Lys Ala Thr Asp His Pro
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His Pro Ser Thr Pro Ala Thr Ala Arg Gln Gln Ile Ala Met Ser Ala
    1330   1335   1340

Ile Val Arg Ser Pro Glu His Gln Pro Ser Ala Met Ser Leu Leu Ala
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Pro Pro Ser Ser Arg Arg Lys Glu Ser Ser Thr Pro Glu Glu Phe Ser
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Arg Arg Leu Lys Glu Arg Met His His Asn Ile Pro His Arg Phe Asn
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Val Gly Leu Asn Met Arg Ala Thr Lys Cys Ala Val Cys Leu Asp Thr
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Val His Phe Gly Arg Gln Ala Ser Lys Cys Leu Glu Cys Gln Val Met
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Cys His Pro Lys Cys Ser Thr Cys Leu Pro Ala Thr Cys Gly Leu Pro
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Ala Glu Tyr Ala Thr His Phe Thr Glu Ala Phe Cys Arg Asp Lys Met
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Glu Gly Trp Met Lys Val Pro Arg Asn Asn Lys Arg Gly Gln Gln Gly

Trp Asp Arg Lys Tyr Ile Val Leu Glu Gly Ser Lys Val Leu Ile Tyr
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Ser Glu Leu Ala Asn Thr Ala Lys Ala Asp Val Pro Tyr Ile Leu Lys
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Ser Cys Ile His Phe Thr Asn Tyr Ser Ile Leu Ile Gly Thr Asn Lys
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    Glu Tyr Leu Leu Cys Phe His Glu Phe Gly Val Phe Val Asp Ser Tyr
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    Gly Arg Arg Ser Arg Thr Asp Asp Leu Lys Trp Ser Arg Leu Pro Leu
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    Leu Glu Val Ile Glu Ile Gln Ala Arg Ser Ser Ala Gly Thr Pro Ala
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    Arg Ala Tyr Leu Asp Ile Pro Asn Pro Arg Tyr Leu Gly Pro Ala Ile
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    Ser Ser Gly Ala Ile Tyr Leu Ala Ser Ser Tyr Gln Asp Lys Leu Arg
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    Pro Thr Tyr Asn Glu His Ile Thr Lys Arg Val Ala Ser Ser Pro Ala
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    Tyr Arg Glu Gly Arg Thr Glu Leu Arg Arg Asp Lys Ser Pro Gly Arg
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    Glu Arg Ser Pro Gly Arg Leu Phe Glu Asp Ser Ser Arg Gly Arg Leu
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Met Lys Ala Met Pro Trp Asn Trp Thr Cys Leu Leu Ser His Leu Leu
1   5   10   15

Met Val Gly Met Gly Ser Ser Thr Leu Leu Thr Arg Gln Pro Ala Pro
            20   25   30

Leu Ser Gln Lys Gln Arg Ser Phe Val Thr Phe Arg Gly Glu Pro Ala
        35   40   45

```
Glu Gly Phe Asn His Leu Val Val Asp Glu Arg Thr Gly His Ile Tyr
    50                  55                  60

Leu Gly Ala Val Asn Arg Ile Tyr Lys Leu Ser Ser Asp Leu Lys Val
 65                  70                  75                  80

Leu Val Thr His Glu Thr Gly Pro Asp Glu Asp Asn Pro Lys Cys Tyr
            85              .       90              95      .

Pro Pro Arg Ile Val Gln Thr Cys Asn Glu Pro Leu Thr Thr Thr Asn
            100             105             110

Asn Val Asn Lys Met Leu Leu Ile Asp Tyr Lys Glu Asn Arg Leu Ile
            115             120             125

Ala Cys Gly Ser Leu Tyr Gln Gly Ile Cys Lys Leu Leu Arg Leu Glu
    130             135             140

Asp Leu Phe Lys Leu Gly Glu Pro Tyr His Lys Lys Glu His Tyr Leu
145             150             155             160

Ser Gly Val Asn Glu Ser Gly Ser Val Phe Gly Val Ile Val Ser Tyr
            165             170             175

Ser Asn Leu Asp Asp Lys Leu Phe Ile Ala Thr Ala Val Asp Gly Lys
            180             185             190

Pro Glu Tyr Phe Pro Thr Ile Ser Ser Arg Lys Leu Thr Lys Asn Ser
            195             200             205

Glu Ala Asp Gly Met Phe Ala Tyr Val Phe His Asp Glu Phe Val Ala
    210             215             220

Ser Met Ile Lys Ile Pro Ser Asp Thr Phe Thr Ile Ile Pro Asp Phe
225             230             235             240

Asp Ile Tyr Tyr Val Tyr Gly Phe Ser Ser Gly Asn Phe Val Tyr Phe
            245             250             255

Leu Thr Leu Gln Pro Glu Met Val Ser Pro Pro Gly Ser Thr Thr Lys
            260             265             270

Glu Gln Val Tyr Thr Ser Lys Leu Val Arg Leu Cys Lys Glu Asp Thr
            275             280             285

Ala Phe Asn Ser Tyr Val Glu Val Pro Ile Gly Cys Glu Arg Ser Gly
    290             295             300

Val Glu Tyr Arg Leu Leu Gln Ala Ala Tyr Leu Ser Lys Ala Gly Ala
305             310             315             320

Val Leu Gly Arg Thr Leu Gly Val His Pro Asp Asp Asp Leu Leu Phe
            325             330             335

Thr Val Phe Ser Lys Gly Gln Lys Arg Lys Met Lys Ser Leu Asp Glu
            340             345             350
```

36

```
Ser Ala Leu Cys Ile Phe Ile Leu Lys Gln Ile Asn Asp Arg Ile Lys
    355                 360                 365

Glu Arg Leu Gln Ser Cys Tyr Arg Gly Glu Gly Thr Leu Asp Leu Ala
    370                 375                 380

Trp Leu Lys Val Lys Asp Ile Pro Cys Ser Ser Ala Leu Leu Thr Ile
385                 390                 395                 400

Asp Asp Asn Phe Cys Gly Leu Asp Met Asn Ala Pro Leu Gly Val Ser
                405                 410                 415

Asp Met Val Arg Gly Ile Pro Val Phe Thr Glu Asp Arg Asp Arg Met
            420                 425                 430

Thr Ser Val Ile Ala Tyr Val Tyr Lys Asn His Ser Leu Ala Phe Val
        435                 440                 445

Gly Thr Lys Ser Gly Lys Leu Lys Lys Ile Arg Val Asp Gly Pro Arg
    450                 455                 460

Gly Asn Ala Leu Gln Tyr Glu Thr Val Gln Val Val Asp Pro Gly Pro
465                 470                 475                 480

Val Leu Arg Asp Met Ala Phe Ser Lys Asp His Glu Gln Leu Tyr Ile
            485                 490                 495

Met Ser Glu Arg Gln Leu Thr Arg Val Pro Val Glu Ser Cys Gly Gln
            500                 505                 510

Tyr Gln Ser Cys Gly Glu Cys Leu Gly Ser Gly Asp Pro His Cys Gly
        515                 520                 525

Trp Cys Val Leu His Asn Thr Cys Thr Arg Lys Glu Arg Cys Glu Arg
    530                 535                 540

Ser Lys Glu Pro Arg Arg Phe Ala Ser Glu Met Lys Gln Cys Val Arg
545                 550                 555                 560

Leu Thr Val His Pro Asn Asn Ile Ser Val Ser Gln Tyr Asn Val Leu
                565                 570                 575

Leu Val Leu Glu Thr Tyr Asn Val Pro Glu Leu Ser Ala Gly Val Asn
            580                 585                 590

Cys Thr Phe Glu Asp Leu Ser Glu Met Asp Gly Leu Val Val Gly Asn
        595                 600                 605

Gln Ile Gln Cys Tyr Ser Pro Ala Ala Lys Glu Val Pro Arg Ile Ile
    610                 615                 620

Thr Glu Asn Gly Asp His His Val Val Gln Leu Gln Leu Lys Ser Lys
625                 630                 635                 640

Glu Thr Gly Met Thr Phe Ala Ser Thr Ser Phe Val Phe Tyr Asn Cys
            645                 650                 655
```

37

```
Ser Val His Asn Ser Cys Leu Ser Cys Val Glu Ser Pro Tyr Arg Cys
            660                 665                 670

His Trp Cys Lys Tyr Arg His Val Cys Thr His Asp Pro Lys Thr Cys
            675                 680                 685

Ser Phe Gln Glu Gly Arg Val Lys Leu Pro Glu Asp Cys Pro Gln Leu
            690                 695                 700

Leu Arg Val Asp Lys Ile Leu Val Pro Val Glu Val Ile Lys Pro Ile
705                 710                 715                 720

Thr Leu Lys Ala Lys Asn Leu Pro Gln Pro Gln Ser Gly Gln Arg Gly
            725                 730                 735

Tyr Glu Cys Ile Leu Asn Ile Gln Gly Ser Glu Gln Arg Val Pro Ala
            740                 745                 750

Leu Arg Phe Asn Ser Ser Ser Val Gln Cys Gln Asn Thr Ser Tyr Ser
            755                 760                 765

Tyr Glu Gly Met Glu Ile Asn Asn Leu Pro Val Glu Leu Thr Val Val
770                 775                 780

Trp Asn Gly His Phe Asn Ile Asp Asn Pro Ala Gln Asn Lys Val His
785                 790                 795                 800

Leu Tyr Lys Cys Gly Ala Met Arg Glu Ser Cys Gly Leu Cys Leu Lys
            805                 810                 815

Ala Asp Pro Asp Phe Ala Cys Gly Trp Cys Gln Gly Pro Gly Gln Cys
            820                 825                 830

Thr Leu Arg Gln His Cys Pro Ala Gln Glu Ser Gln Trp Leu Glu Leu
            835                 840                 845

Ser Gly Ala Lys Ser Lys Cys Thr Asn Pro Arg Ile Thr Glu Ile Ile
850                 855                 860

Pro Val Thr Gly Pro Arg Glu Gly Gly Thr Lys Val Thr Ile Arg Gly
865                 870                 875                 880

Glu Asn Leu Gly Leu Glu Phe Arg Asp Ile Ala Ser His Val Lys Val
            885                 890                 895

Ala Gly Val Glu Cys Ser Pro Leu Val Asp Gly Tyr Ile Pro Ala Glu
            900                 905                 910

Gln Ile Val Cys Glu Met Gly Glu Ala Lys Pro Ser Gln His Ala Gly
            915                 920                 925

Phe Val Glu Ile Cys Val Ala Val Cys Arg Pro Glu Phe Met Ala Arg
            930                 935                 940

Ser Ser Gln Leu Tyr Tyr Phe Met Thr Leu Thr Leu Ser Asp Leu Lys
945                 950                 955                 960
```

38

```
Pro Ser Arg Gly Pro Met Ser Gly Gly Thr Gln Val Thr Ile Thr Gly
          965                 970                 975

Thr Asn Leu Asn Ala Gly Ser Asn Val Val Val Met Phe Gly Lys Gln
          980                 985                 990

Pro Cys Leu Phe His Arg Arg Ser Pro Ser Tyr Ile Val Cys Asn Thr
          995            1000                1005

Thr Ser Ser Asp Glu Val Leu Glu Met Lys Val Ser Val Gln Val Asp
     1010                1015                1020

Arg Ala Lys Ile His Gln Asp Leu Val Phe Gln Tyr Val Glu Asp Pro
1025                1030                1035                1040

Thr Ile Val Arg Ile Glu Pro Glu Trp Ser Ile Val Ser Gly Asn Thr
          1045                1050                1055

Pro Ile Ala Val Trp Gly Thr His Leu Asp Leu Ile Gln Asn Pro Gln
          1060                1065                1070

Ile Arg Ala Lys His Gly Gly Lys Glu His Ile Asn Ile Cys Glu Val
          1075                1080                1085

Leu Asn Ala Thr Glu Met Thr Cys Gln Ala Pro Ala Leu Ala Leu Gly
     1090                1095                1100

Pro Asp His Gln Ser Asp Leu Thr Glu Arg Pro Glu Glu Phe Gly Phe
1105                1110                1115                1120

Ile Leu Asp Asn Val Gln Ser Leu Leu Ile Leu Asn Lys Thr Asn Phe
          1125                1130                1135

Thr Tyr Tyr Pro Asn Pro Val Phe Glu Ala Phe Gly Pro Ser Gly Ile
          1140                1145                1150

Leu Glu Leu Lys Pro Gly Thr Pro Ile Ile Leu Lys Gly Lys Asn Leu
          1155                1160                1165

Ile Pro Pro Val Ala Gly Gly Asn Val Lys Leu Asn Tyr Thr Val Leu
     1170                1175                1180

Val Gly Glu Lys Pro Cys Thr Val Thr Val Ser Asp Val Gln Leu Leu
1185                1190                1195                1200

Cys Glu Ser Pro Asn Leu Ile Gly Arg His Lys Val Met Ala Arg Val
          1205                1210                1215

Gly Gly Met Glu Tyr Ser Pro Gly Met Val Tyr Ile Ala Pro Asp Ser
          1220                1225                1230

Pro Leu Ser Leu Pro Ala Ile Val Ser Ile Ala Val Ala Gly Gly Leu
     1235                1240                1245

Leu Ile Ile Phe Ile Val Ala Val Leu Ile Ala Tyr Lys Arg Lys Ser
     1250                1255                1260

                            .              .

                           39
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Arg Glu Ser Asp Leu Thr Leu Lys Arg Leu Gln Met Gln Met Asp Asn
1265   1270   1275   1280

Leu Glu Ser Arg Val Ala Leu Glu Cys Lys Glu Ala Phe Ala Glu Leu
          1285   1290   1295

Gln Thr Asp Ile His Glu Leu Thr Ser Asp Leu Asp Gly Ala Gly Ile
     1300   1305   1310

Pro Phe Leu Asp Tyr Arg Thr Tyr Thr Met Arg Val Leu Phe Pro Gly
     1315   1320   1325

Ile Glu Asp His Pro Val Leu Arg Asp Leu Glu Val Pro Gly Tyr Arg
     1330   1335   1340

Gln Glu Arg Val Glu Lys Gly Leu Lys Leu Phe Ala Gln Leu Ile Asn
1345   1350   1355   1360

Asn Lys Val Phe Leu Leu Ser Phe Ile Arg Thr Leu Glu Ser Gln Arg
          1365   1370   1375

Ser Phe Ser Met Arg Asp Arg Gly Asn Val Ala Ser Leu Ile Met Thr
          1380   1385   1390

Val Leu Gln Ser Lys Leu Glu Tyr Ala Thr Asp Val Leu Lys Gln Leu
     1395   1400   1405

Leu Ala Asp Leu Ile Asp Lys Asn Leu Glu Ser Lys Asn His Pro Lys
     1410   1415   1420

Leu Leu Leu Arg Arg Thr Glu Ser Val Ala Glu Lys Met Leu Thr Asn
1425   1430   1435   1440

Trp Phe Thr Phe Leu Leu Tyr Lys Phe Leu Lys Glu Cys Ala Gly Glu
          1445   1450   1455

Pro Leu Phe Ser Leu Phe Cys Ala Ile Lys Gln Gln Met Glu Lys Gly
          1460   1465   1470

Pro Ile Asp Ala Ile Thr Gly Glu Ala Arg Tyr Ser Leu Ser Glu Asp
     1475   1480   1485

Lys Leu Ile Arg Gln Gln Ile Asp Tyr Lys Thr Leu Val Leu Ser Cys
     1490   1495   1500

Val Ser Pro Asp Asn Ala Asn Ser Pro Glu Val Pro Val Lys Ile Leu
1505   1510   1515   1520

Asn Cys Asp Thr Ile Thr Gln Val Lys Glu Lys Ile Leu Asp Ala Ile
          1525   1530   1535

Phe Lys Asn Val Pro Cys Ser His Arg Pro Lys Ala Ala Asp Met Asp
          1540   1545   1550

Leu Glu Trp Arg Gln Gly Ser Gly Ala Arg Met Ile Leu Gln Asp Glu
     1555   1560   1565

40

Asp Ile Thr Thr Lys Ile Glu Asn Asp Trp Lys Arg Leu Asn Thr Leu
   1570   1575   1580

Ala His Tyr Gln Val Pro Asp Gly Ser Val Val Ala Leu Val Ser Lys
1585   1590   1595   1600

Gln Val Thr Ala Tyr Asn Ala Val Asn Asn Ser Thr Val Ser Arg Thr
           1605   1610   1615

Ser Ala Ser Lys Tyr Glu Asn Met Ile Arg Tyr Thr Gly Ser Pro Asp
           1620   1625   1630

Ser Leu Arg Ser Arg Thr Pro Met Ile Thr Pro Asp Leu Glu Ser Gly
           1635   1640   1645

Val Lys Met Trp His Leu Val Lys Asn His Glu His Gly Asp Gln Lys
   1650   1655   1660

Glu Gly Asp Arg Gly Ser Lys Met Val Ser Glu Ile Tyr Leu Thr Arg
1665   1670   1675   1680

Leu Leu Ala Thr Lys Gly Thr Leu Gln Lys Phe Val Asp Asp Leu Phe
           1685   1690   1695

Glu Thr Ile Phe Ser Thr Ala His Arg Gly Ser Ala Leu Pro Leu Ala
           1700   1705   1710

Ile Lys Tyr Met Phe Asp Phe Leu Asp Glu Gln Ala Asp Lys His Gly
           1715   1720   1725

Ile His Asp Pro His Val Arg His Thr Trp Lys Ser Asn Cys Leu Pro
   1730   1735   1740

Leu Arg Phe Trp Val Asn Met Ile Lys Asn Pro Gln Phe Val Phe Asp
1745   1750   1755   1760

Ile His Lys Asn Ser Ile Thr Asp Ala Cys Leu Ser Val Val Ala Gln
           1765   1770   1775

Thr Phe Met Asp Ser Cys Ser Thr Ser Glu His Arg Leu Gly Lys Asp
           1780   1785   1790

Ser Pro Ser Asn Lys Leu Leu Tyr Ala Lys Asp Ile Pro Ser Tyr Lys
   1795   1800   1805

Asn Trp Val Glu Arg Tyr Tyr Ser Asp Ile Gly Lys Met Pro Ala Ile
   1810   1815   1820

Ser Asp Gln Asp Met Asn Ala Tyr Leu Ala Glu Gln Ser Arg Met His
1825   1830   1835   1840

Met Asn Glu Phe Asn Thr Met Ser Ala Leu Ser Glu Ile Phe Ser Tyr
           1845   1850   1855

Val Gly Lys Tyr Ser Glu Glu Ile Leu Gly Pro Leu Asp His Asp Asp
           1860   1865   1870

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```
Gln Cys Gly Lys Gln Lys Leu Ala Tyr Lys Leu Glu Gln Val Ile Thr
        1875              1880              1885

Leu Met Ser Leu Asp Ser Asn Lys
    1890              1895


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<211> 1535
<212> DNA
<213> Homo sapiens

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gtgcaggtgg tcaccgcctg cctgctgacc ctactcgtca tctggacctt gctgggcaac 180
gtgctggtgt ccgcagccat cgtgtggagc cgccacctgc gcgccaagat gaccaacgtc 240
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tactgggcca tctccaggcc cttccgctac gagcgcaaga tgacccagcg catggccttg 480
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aactggacgc cctgggagga ggccgtttgg gagcccgacg tgagggcaga gaactgtgac 660
tccagcctga atcgaaccta cgccatccct tcctcgctca tcagcttcta catccccatg 720
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tcggtgatca tggggggtctt cgtgtgttgc tggctgccct tcttcatcct taactgcatg 960
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cgcatgtccc agatctatca gacatcccca gatggtgacc atgttgcaga gtctgtctgg 1380
gagctggact gcgaggggga gatttcttta gacaaaataa cacctttcac cccaaatgga 1440
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aagcatgcac acacaagcaa atacatggct ttcca                          1535


<210> 15
<211> 480
<212> PRT
<213> Homo sapiens

<400> 15
Met Leu Pro Pro Arg Ser Asn Asp Thr Ala Tyr Pro Gly Gln Leu Ala
  1               5                  10                  15

Leu Tyr Gln Gln Leu Ala Gln Gly Asn Ala Val Gly Gly Ser Ala Gly
            20                  25                  30

Ala Pro Pro Leu Gly Pro Val Gln Val Val Thr Ala Cys Leu Leu Thr
            35                  40                  45
```

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Leu Leu Val Ile Trp Thr Leu Leu Gly Asn Val Leu Val Ser Ala Ala
    50                  55                  60

Ile Val Trp Ser Arg His Leu Arg Ala Lys Met Thr Asn Val Phe Ile
65              70                  75                      80

Val Ser Leu Pro Val Ser Asp Leu Phe Val Ala Leu Leu Val Met Ser
                85                  90                  95

Trp Lys Ala Val Ala Glu Val Ala Gly Tyr Trp Pro Phe Glu Ala Phe
            100                 105                 110

Cys Asp Val Trp Val Ala Phe Asp Ile Met Cys Ser Thr Ala Ser Ile
        115                 120                 125

Leu Asn Leu Cys Val Ile Ser Val Ala Arg Tyr Trp Ala Ile Ser Arg
    130                 135                 140

Pro Phe Arg Tyr Glu Arg Lys Met Thr Gln Arg Met Ala Leu Val Met
145             150                 155                 160

Val Arg Pro Ala Trp Thr Leu Ser Ser Leu Ile Ser Phe Ile Pro Val
            165                 170                 175

Gln Leu Asn Trp His Arg Asp Gln Ala Val Ser Trp Gly Gly Leu Asp
            180                 185                 190

Leu Pro Asn Asn Leu Ala Asn Trp Thr Pro Trp Glu Glu Ala Val Trp
        195                 200                 205

Glu Pro Asp Val Arg Ala Glu Asn Cys Asp Ser Ser Leu Asn Arg Thr
    210                 215                 220

Tyr Ala Ile Pro Ser Ser Leu Ile Ser Phe Tyr Ile Pro Met Ala Ile
225                 230                 235                 240

Met Ile Val Thr Tyr Thr Arg Ile Tyr Arg Ile Ala Gln Val Gln Ile
            245                 250                 255

Arg Arg Ile Ser Ser Leu Glu Arg Ala Ala Glu His Val Gln Ser Cys
        260                 265                 270

Arg Ser Ser Ala Gly Cys Thr Pro Asp Thr Ser Leu Arg Phe Ser Ile
    275                 280                 285

Lys Lys Glu Thr Glu Val Leu Lys Thr Leu Ser Val Ile Met Gly Val
    290                 295                 300

Phe Val Cys Cys Trp Leu Pro Phe Phe Ile Leu Asn Cys Met Val Pro
305             310                 315                 320

Phe Cys Ser Gly His Pro Lys Gly Pro Pro Ala Gly Phe Pro Cys Val
            325                 330                 335

Ser Glu Thr Thr Phe Asp Val Phe Ile Trp Phe Cys Trp Ala Asn Ser
            340                 345                 350
```

43

Ser Leu Asn Pro Val Pro Ser His Tyr Ala Phe Asn Ala Asp Phe Arg
        355   360   365

Lys Val Phe Ala Gln Leu Leu Gly Cys Ser His Val Cys Ser Arg Thr
        370   375   380

Pro Val Glu Thr Val Asn Ile Ser Asn Glu Leu Ile Ser Tyr Asn Gln
385   390   395   400

Asp Thr Val Phe His Lys Glu Ile Ala Ala Ala Tyr Ile His Met Met
            405   410   415

Pro Asn Ala Ile Pro Pro Gly Asp Arg Glu Val Asp Asn Asp Glu Glu
            420   425   430

Glu Glu Ser Pro Phe Asp Arg Met Ser Gln Ile Tyr Gln Thr Ser Pro
        435   440   445

Asp Gly Asp His Val Ala Glu Ser Val Trp Glu Leu Asp Cys Glu Gly
        450   455   460

Glu Ile Ser Leu Asp Lys Ile Thr Pro Phe Thr Pro Asn Gly Phe His
465   470   475   ·   480

<210> 16
<211> 2657
<212> DNA
<213> Homo sapiens

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ttgttttagg gggcttattt cctattaatg aaaaaggcac tggaactgaa gagtgtggac 180
gaatcaatga agacagaggt atccaacgcc tggaggccat gttgtttgcc attgatgaaa 240
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44

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cctacttaaa agttggccac tgggcagaaa ctttatatct agatgtggac tctattcatt 1500
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<210> 17
<211> 879
<212> PRT
<213> Homo sapiens

<400> 17
Met Lys Met Leu Thr Arg Leu Gln Val Leu Met Leu Ala Leu Phe Ser
  1   5   10   15

Lys Gly Phe Leu Val Ser Leu Gly Asp His Asn Phe Met Arg Arg Glu
                20   25   30

Ile Lys Ile Glu Gly Asp Leu Val Leu Gly Gly Leu Phe Pro Ile Asn
            35   40   45

Glu Lys Gly Thr Gly Thr Glu Glu Cys Gly Arg Ile Asn Glu Asp Arg
        50   55   60

Gly Ile Gln Arg Leu Glu Ala Met Leu Phe Ala Ile Asp Glu Ile Asn
65   70   75   80

Lys Asp Asn Tyr Leu Leu Pro Gly Val Lys Leu Gly Val His Ile Leu
                85   90   95

Asp Thr Cys Ser Arg Asp Thr Tyr Ala Leu Glu Gln Ser Leu Glu Phe
            100   105   110

Val Arg Ala Ser Leu Thr Lys Val Asp Glu Ala Glu Tyr Met Cys Pro
        115   120   125

Asp Gly Ser Tyr Ala Ile Gln Glu Asn Ile Pro Leu Leu Ile Ala Gly
        130   135   140

45

```
Val Ile Gly Gly Ser Tyr Ser Ser Val Ser Ile Gln Val Ala Asn Leu
145             150             155             160

Leu Arg Leu Phe Gln Ile Pro Gln Ile Ser Tyr Ala Ser Thr Ser Ala
                165             170             175

Lys Leu Ser Asp Lys Ser Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro
            180             185             190

Pro Asp Phe Tyr Gln Ala Lys Ala Met Ala Glu Ile Leu Arg Tyr Phe
            195             200             205

Asn Trp Thr Tyr Val Ser Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu
        210             215             220

Thr Gly Ile Glu Ala Phe Glu Gln Glu Ala Arg Leu Arg Asn Ile Cys
225             230             235             240

Ile Ala Thr Ala Glu Lys Val Gly Arg Ser Asn Ile Arg Lys Ser Tyr
            245             250             255

Asp Ser Val Ile Arg Glu Leu Leu Gln Lys Pro Asn Ala Arg Val Val
            260             265             270

Val Leu Phe Met Arg Ser Asp Asp Ser Arg Glu Leu Ile Ala Ala Ala
        275             280             285

Ser Arg Val Asn Ala Ser Phe Thr Trp Val Ala Ser Asp Gly Trp Gly
    290             295             300

Ala Gln Glu Ser Ile Val Lys Gly Ser Glu His Val Ala Tyr Gly Ala
305             310             315             320

Ile Thr Leu Glu Leu Ala Ser His Pro Val Arg Gln Phe Asp Arg Tyr
            325             330             335

Phe Gln Ser Leu Asn Pro Tyr Asn Asn His Arg Asn Pro Trp Phe Arg
            340             345             350

Asp Phe Trp Glu Gln Lys Phe Gln Cys Ser Leu Gln Asn Lys Arg Asn
        355             360             365

His Arg Gln Ile Cys Asp Lys His Leu Ala Ile Asp Ser Ser Asn Tyr
    370             375             380

Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala Val Tyr Ala Met
385             390             395             400

Ala His Ala Leu His Lys Met Gln Arg Thr Leu Cys Pro Asn Thr Thr
            405             410             415

Lys Leu Cys Asp Ala Met Lys Ile Leu Asp Gly Lys Lys Leu Tyr Lys
        420             425             430

Asp Tyr Leu Leu Lys Ile Asn Phe Leu Ala Pro Phe Asn Pro Asn Lys
        435             440             445
```

46

```
Gly Ala Asp Ser Ile Val Lys Phe Asp Thr Tyr Gly Asp Gly Met Gly
    450             455             460

Arg Tyr Asn Val Phe Asn Phe Gln His Ile Gly Gly Lys Tyr Ser Tyr
465             470             475             480

Leu Lys Val Gly His Trp Ala Glu Thr Leu Tyr Leu Asp Val Asp Ser
            485             490             495

Ile His Trp Ser Arg Asn Ser Val Pro Thr Ser Gln Cys Ser Asp Pro
        500             505             510

Cys Ala Pro Asn Glu Met Lys Asn Met Gln Pro Gly Asp Val Cys Cys
        515             520             525

Trp Ile Cys Ile Pro Cys Glu Pro Tyr Glu Tyr Leu Val Asp Glu Phe
    530             535             540

Thr Cys Met Asp Cys Gly Pro Gly Gln Trp Pro Thr Ala Asp Leu Ser
545             550             555             560

Gly Cys Tyr Asn Leu Pro Glu Asp Tyr Ile Arg Trp Glu Asp Ala Trp
            565             570             575

Ala Ile Gly Pro Val Thr Ile Ala Cys Leu Gly Phe Met Cys Thr Cys
        580             585             590

Ile Val Ile Thr Val Phe Ile Lys His Asn Asn Thr Pro Leu Val Lys
        595             600             605

Ala Ser Gly Arg Glu Leu Cys Tyr Ile Leu Leu Phe Gly Val Ser Leu
    610             615             620

Ser Tyr Cys Met Thr Phe Phe Phe Ile Ala Lys Pro Ser Pro Val Ile
625             630             635             640

Cys Ala Leu Arg Arg Leu Gly Leu Gly Thr Ser Phe Ala Ile Cys Tyr
            645             650             655

Ser Ala Leu Leu Thr Lys Thr Asn Cys Ile Ala Arg Ile Phe Asp Gly
        660             665             670

Val Lys Asn Gly Ala Gln Arg Pro Lys Phe Ile Ser Pro Ser Ser Gln
        675             680             685

Val Phe Ile Cys Leu Gly Leu Ile Leu Val Gln Ile Val Met Val Ser
    690             695             700

Val Trp Leu Ile Leu Glu Thr Pro Gly Thr Arg Arg Tyr Thr Leu Pro
705             710             715             720

Glu Lys Arg Glu Thr Val Ile Leu Lys Cys Asn Val Lys Asp Ser Ser
            725             730             735

Met Leu Ile Ser Leu Thr Tyr Asp Val Val Leu Val Ile Leu Cys Thr
            740             745             750
```

47

```
Val Tyr Ala Phe Lys Thr Arg Lys Cys Pro Glu Asn Phe Asn Glu Ala
        755              760              765

Lys Phe Ile Gly Phe Thr Met Tyr Thr Thr Cys Ile Ile Trp Leu Ala
    770              775              780

Phe Leu Pro Ile Phe Tyr Val Thr Ser Ser Asp Tyr Arg Val Gln Thr
785              790              795                  800

Thr Thr Met Cys Ile Ser Val Ser Leu Ser Gly Phe Val Val Leu Gly
            805              810                  815

Cys Leu Phe Ala Pro Lys Val His Ile Val Leu Phe Gln Pro Gln Lys
        820              825                  830

Asn Val Val Thr His Arg Leu His Leu Asn Arg Phe Ser Val Ser Gly
        835              840              845

Thr Ala Thr Thr Tyr Ser Gln Ala Ser Ala Ser Thr Tyr Val Pro Thr
    850              855                  860

Val Cys Asn Gly Arg Glu Val Leu Asp Ser Thr Thr Ser Ser Leu
865              870              875


<210> 18
<211> 1366
<212> DNA
<213> Homo sapiens

<400> 18
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ctggggctcg tgctcttcat ggtctatggc aacgtgcacg tgagcacaga gtccaacctg 180
caggccaccg agcgccgagc cgagggccta tacagtcagc tcctagggct cacggcctcc 240
cagtccaact tgaccaagga gctcaacttc accacccgcg ccaaggatgc catcatgcag 300
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gtgcaagccc tctgcctgcc cctggacaag gacaagtttg agatggacct tcgtaacctg 720
tggagggact ccattatccc acgcagcctg gacaacctgg ttacaacct ctaccatccc 780
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tccaaggtgg aaggtcagtg ccggagcctc cgggcggata tcgaacgcgt ggcccgcgag 900
aactcagacc tccaacgcca gaagctggaa gcccagcagg cctgcgggc cagtcaggag 960
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<210> 19
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<211> 442
<212> PRT
<213> Homo sapiens

<400> 19
Met Gly Leu Ala Met Glu His Gly Gly Ser Tyr Ala Arg Ala Gly Gly
  1   5   10   15

Ser Ser Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu Phe Val
            20   25   30

Ser Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe Met Val
            35   40   45

Tyr Gly Asn Val His Val Ser Thr Glu Ser Asn Leu Gln Ala Thr Glu
        50   55   60

Arg Arg Ala Glu Gly Leu Tyr Ser Gln Leu Leu Gly Leu Thr Ala Ser
65   70   75   80

Gln Ser Asn Leu Thr Lys Glu Leu Asn Phe Thr Thr Arg Ala Lys Asp
                85   90   95

Ala Ile Met Gln Met Trp Leu Asn Ala Arg Arg Asp Leu Asp Arg Ile
            100   105   110

Asn Ala Ser Phe Arg Gln Cys Gln Gly Asp Arg Val Ile Tyr Thr Asn
            115   120   125

Asn Gln Arg Tyr Met Ala Ala Ile Ile Leu Ser Glu Lys Gln Cys Arg
    130   135   140

Asp Gln Phe Lys Asp Met Asn Lys Ser Cys Asp Ala Leu Leu Phe Met
145   150   155   160

Leu Asn Gln Lys Val Lys Thr Leu Glu Val Glu Ile Ala Lys Glu Lys
                165   170   175

Thr Ile Cys Thr Lys Asp Lys Glu Ser Val Leu Leu Asn Lys Arg Val
            180   185   190

Ala Glu Glu Gln Leu Val Glu Cys Val Lys Thr Arg Glu Leu Gln His
            195   200   205

Gln Glu Arg Gln Leu Ala Lys Glu Gln Leu Gln Lys Val Gln Ala Leu
    210   215   220

Cys Leu Pro Leu Asp Lys Asp Lys Phe Glu Met Asp Leu Arg Asn Leu
225   230   235   240

Trp Arg Asp Ser Ile Ile Pro Arg Ser Leu Asp Asn Leu Gly Tyr Asn
            245   250   255

Leu Tyr His Pro Leu Gly Ser Glu Leu Ala Ser Ile Arg Arg Ala Cys
            260   265   270

Asp His Met Pro Ser Leu Met Ser Ser Lys Val Glu Gly Gln Cys Arg

49

```
    Ser Leu Arg Ala Asp Ile Glu Arg Val Ala Arg Glu Asn Ser Asp Leu
        290                 295                 300

    Gln Arg Gln Lys Leu Glu Ala Gln Gln Gly Leu Arg Ala Ser Gln Glu
    305                 310                 315                 320

    Ala Lys Gln Lys Val Glu Lys Glu Ala Gln Ala Arg Glu Ala Lys Leu
                    325                 330                 335

    Gln Ala Glu Cys Ser Arg Gln Thr Gln Leu Ala Leu Glu Glu Lys Ala
                    340                 345                 350

    Val Leu Arg Lys Glu Arg Asp Asn Leu Ala Lys Glu Leu Glu Glu Lys
                    355                 360                 365

    Lys Arg Glu Ala Glu Gln Leu Arg Met Glu Leu Ala Ile Arg Asn Ser
        370                 375                 380

    Ala Leu Asp Thr Cys Ile Lys Thr Lys Ser Gln Pro Met Met Pro Val
    385                 390                 395                 400

    Ser Arg Pro Met Gly Pro Val Pro Asn Pro Gln Pro Ile Asp Pro Ala
                    405                 410                 415

    Ser Leu Glu Glu Phe Lys Arg Lys Ile Leu Glu Ser Gln Arg Pro Pro
                    420                 425                 430

    Ala Gly Ile Pro Val Ala Pro Ser Ser Gly
                    435                 440
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gaattctagg tggtggtgag cagggacggt gcaccggacg gcgggatcga gcaaatgggt   60
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tattacctgc gctacttctt cctcttcgtc tccctcatcc aattcctcat catcctgggg  180
ctcgtgctct tcatggtcta tggcgacgtg cacgtgagca cagagtccaa cctgcaggcc  240
accgagcgcc gagccgaggg cctatacagt cagctcctag ggctcacggc ctcccagtcc  300
aacttgacca aggagctcaa cttcaccacc cgcgccaagg atgccatcat gcagatgtgg  360
ctgaatgctc gccgcgacct ggaccgcatc aatgccagct ccgccagtg ccagggtgac  420
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tgcagagatc aattcaagga catgaacaag agctgcgatg ccttgctctt catgctgaat  540
cagaaggtga agacgctgga ggtggagata gccaaggaga gaccatttg cactaaggat  600
aaggaaagcg tgctgctgaa caaacgcgtg gcggaggaac agctggttga atgcgtgaaa  660
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gccctctgcc tgcccctgga caaggacaag tttgagatgg accttcgtaa cctgtggagg  780
gactccatta tccccacgcag cctggacaac ctgggttaca acctctacca tcccctgggc  840
tcggaattgg cctccatccg cagagcctgc gaccacatgc cagcctcat gagctccaag  900
gtggaggagc tggcccggag cctccgggcg gatatcgaac gcgtggcccg cgagaactca  960
gacctccaac gccagaagct ggaagcccag cagggcctgc gggccagtca ggaggcgaaa 1020
cagaaggtgg agaaggaggc tcaggcccgg gaggccaagc tccaagctga atgctcccgg 1080
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50

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aactcagccc tggacacctg catcaagacc aagtcgcagc cgatgatgcc agtgtcaagg 1260
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```

<210> 21
<211> 442
<212> PRT
<213> Homo sapiens

<400> 21

```
Met Gly Leu Ala Met Glu Tyr Gly Gly Ser Tyr Ala Arg Ala Gly Gly
 1               5                  10                  15

Ser Ser Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu Phe Val
            20                  25                  30

Ser Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe Met Val
        35                  40                  45

Tyr Gly Asp Val His Val Ser Thr Glu Ser Asn Leu Gln Ala Thr Glu
    50                  55                  60

Arg Arg Ala Glu Gly Leu Tyr Ser Gln Leu Leu Gly Leu Thr Ala Ser
65                  70                  75                  80

Gln Ser Asn Leu Thr Lys Glu Leu Asn Phe Thr Thr Arg Ala Lys Asp
                85                  90                  95

Ala Ile Met Gln Met Trp Leu Asn Ala Arg Arg Asp Leu Asp Arg Ile
            100                 105                 110

Asn Ala Ser Phe Arg Gln Cys Gln Gly Asp Arg Val Ile Tyr Thr Asn
            115                 120                 125

Asn Gln Arg Tyr Met Ala Ala Ile Ile Leu Ser Glu Lys Gln Cys Arg
    130                 135                 140

Asp Gln Phe Lys Asp Met Asn Lys Ser Cys Asp Ala Leu Leu Phe Met
145                 150                 155                 160

Leu Asn Gln Lys Val Lys Thr Leu Glu Val Glu Ile Ala Lys Glu Lys
                165                 170                 175

Thr Ile Cys Thr Lys Asp Lys Glu Ser Val Leu Leu Asn Lys Arg Val
            180                 185                 190

Ala Glu Glu Gln Leu Val Glu Cys Val Lys Thr Arg Glu Leu Gln His
            195                 200                 205

Gln Glu Arg Gln Leu Ala Lys Glu Gln Leu Gln Lys Val Gln Ala Leu
    210                 215                 220

Cys Leu Pro Leu Asp Lys Asp Lys Phe Glu Met Asp Leu Arg Asn Leu
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```
        Trp Arg Asp Ser Ile Ile Pro Arg Ser Leu Asp Asn Leu Gly Tyr Asn
                        245                 250                 255

        Leu Tyr His Pro Leu Gly Ser Glu Leu Ala Ser Ile Arg Arg Ala Cys
                        260                 265                 270

        Asp His Met Pro Ser Leu Met Ser Ser Lys Val Glu Glu Leu Ala Arg
                    275                 280                 285

        Ser Leu Arg Ala Asp Ile Glu Arg Val Ala Arg Glu Asn Ser Asp Leu
            290                 295                 300

        Gln Arg Gln Lys Leu Glu Ala Gln Gln Gly Leu Arg Ala Ser Gln Glu
        305                 310                 315                 320

        Ala Lys Gln Lys Val Glu Lys Glu Ala Gln Ala Arg Glu Ala Lys Leu
                        325                 330                 335

        Gln Ala Glu Cys Ser Arg Gln Thr Gln Leu Ala Leu Glu Glu Lys Ala
                        340                 345                 350

        Val Leu Arg Lys Glu Arg Asp Asn Leu Ala Lys Glu Leu Glu Glu Lys
                    355                 360                 365

        Lys Arg Glu Ala Glu Gln Leu Arg Met Glu Leu Ala Ile Arg Asn Ser
            370                 375                 380

        Ala Leu Asp Thr Cys Ile Lys Thr Lys Ser Gln Pro Met Met Pro Val
        385                 390                 395                 400

        Ser Arg Pro Met Gly Pro Val Pro Asn Pro Gln Pro Ile Asp Pro Ala
                        405                 410                 415

        Ser Leu Glu Glu Phe Lys Arg Lys Ile Leu Glu Ser Gln Arg Pro Pro
                        420                 425                 430

        Ala Gly Ile Pro Val Ala Pro Ser Ser Gly
                    435                 440
```

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<400> 22
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ctgaatcaga aggtgaagac gctggaggtg gagatagcca aggagaagac catttgcact 540
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<210> 23
<211> 442
<212> PRT
<213> Homo sapiens

<400> 23
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Met Gly Leu Ala Met Glu His Gly Gly Ser Tyr Ala Arg Ala Gly Gly
 1               5                  10                  15


Ser Ser Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu Phe Val
                20                  25                  30


Ser Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe Met Val
            35                  40                  45


Tyr Gly Asn Val His Val Ser Thr Glu Ser Asn Leu Gln Ala Thr Glu
        50                  55                  60


Arg Arg Ala Glu Gly Leu Tyr Ser Gln Leu Leu Gly Leu Thr Ala Ser
65                  70                  75                  80


Gln Ser Asn Leu Thr Lys Glu Leu Asn Phe Thr Thr Arg Ala Lys Asp
                85                  90                  95


Ala Ile Met Gln Met Trp Leu Asn Ala Arg Arg Asp Leu Asp Arg Ile
            100                 105                 110


Asn Ala Ser Phe Arg Gln Cys Gln Gly Asp Arg Val Ile Tyr Thr Asn
        115                 120                 125
```

53

```
Asn Gln Arg Tyr Met Ala Ala Ile Ile Leu Ser Glu Lys Gln Cys Arg
    130             135             140

Asp Gln Phe Lys Asp Met Asn Lys Ser Cys Asp Ala Leu Leu Phe Met
145             150             155             160

Leu Asn Gln Lys Val Lys Thr Leu Glu Val Glu Ile Ala Lys Glu Lys
                165             170             175

Thr Ile Cys Thr Lys Asp Lys Glu Ser Val Leu Leu Asn Lys Arg Val
            180             185             190

Ala Glu Glu Gln Leu Val Glu Cys Val Lys Thr Arg Glu Leu Gln His
        195             200             205

Gln Glu Arg Gln Leu Ala Lys Glu Gln Leu Gln Arg Val Gln Ala Leu
    210             215             220

Cys Leu Pro Leu Asp Lys Asp Lys Phe Glu Met Asp Leu Arg Asn Leu
225             230             235             240

Trp Arg Asp Ser Ile Ile Pro Arg Ser Leu Asp Asn Leu Gly Tyr Asn
            245             250             255

Leu Tyr His Pro Leu Gly Ser Glu Leu Ala Ser Ile Arg Arg Ala Cys
        260             265             270

Asp His Met Pro Ser Leu Val Ser Ser Lys Val Glu Glu Leu Ala Arg
        275             280             285

Ser Leu Arg Ala Asp Ile Glu Arg Val Ala Arg Glu Asn Ser Asp Leu
    290             295             300

Gln Arg Gln Lys Leu Glu Ala Gln Gln Gly Leu Arg Ala Ser Gln Glu
305             310             315             320

Ala Lys Gln Lys Val Glu Lys Glu Ala Gln Ala Arg Glu Ala Lys Leu
            325             330             335

Gln Ala Glu Cys Ser Arg Gln Thr Gln Leu Ala Leu Glu Glu Lys Ala
        340             345             350

Val Leu Arg Lys Glu Arg Asp Asn Leu Ala Lys Glu Leu Glu Glu Lys
    355             360             365

Lys Arg Glu Ala Glu Gln Leu Arg Met Glu Leu Ala Ile Arg Asn Ser
    370             375             380

Ala Leu Asp Thr Cys Ile Lys Thr Lys Ser Gln Pro Met Met Pro Val
385             390             395             400

Ser Arg Pro Met Gly Pro Val Pro Asn Pro Gln Pro Ile Asp Pro Ala
            405             410             415

Ser Leu Glu Glu Phe Lys Arg Lys Ile Leu Glu Ser Gln Arg Pro Pro
        420             425             430
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Ala Gly Ile Pro Val Ala Pro Ser Ser Gly
      435   440

<210> 24
<211> 8640
<212> DNA
<213> Homo sapiens

<400> 24
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tgccgtgctg cacctgcccc tcctctacca gtggctgcag aacagcctgc aggaaggtgg 180
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56

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            20   25   30

Arg Leu Cys Gln Ala Ala Ile Gln Lys Leu Gln Glu Tyr Ile Gln Leu
        35   40   45

57

```
Asn Phe Ala Val Asp Glu Ser Thr Val Pro Pro Asp His Ser Pro Pro
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Glu Met Glu Ile Cys Thr Val Tyr Leu Thr Lys Glu Leu Gly Asp Thr
65                  70                  75                      80

Glu Thr Val Gly Leu Ser Phe Gly Asn Ile Pro Val Phe Gly Asp Tyr
                85                  90                  95

Gly Glu Lys Arg Arg Gly Gly Lys Lys Arg Lys Thr His Gln Gly Pro
            100             105             110

Val Leu Asp Val Gly Cys Ile Trp Val Thr Glu Leu Arg Lys Asn Ser
        115             120             125

Pro Ala Gly Lys Ser Gly Lys Val Arg Leu Arg Asp Glu Ile Leu Ser
    130             135.            140

Leu Asn Gly Gln Leu Met Val Gly Val Asp Val Ser Gly Ala Ser Tyr
145             150             155             160

Leu Ala Glu Gln Cys Trp Asn Gly Gly Phe Ile Tyr Leu Ile Met Leu
            165             170             175

Arg Arg Phe Lys His Lys Ala His Ser Thr Tyr Asn Gly Asn Ser Ser
        180             185             190

Asn Ser Ser Glu Pro Gly Glu Thr Pro Thr Leu Glu Leu Gly Asp Arg
    195             200             205

Thr Ala Lys Lys Gly Lys Arg Thr Arg Lys Phe Gly Val Ile Ser Arg
    210             215             220

Pro Pro Ala Asn Lys Ala Pro Glu Glu Ser Lys Gly Ser Ala Gly Cys
225             230             235             240

Glu Val Ser Ser Asp Pro Ser Thr Glu Leu Glu Asn Gly Leu Asp Pro
            245             250                 255

Glu Leu Gly Asn Gly His Val Phe Gln Leu Glu Asn Gly Pro Asp Ser
            260             265             270

Leu Lys Glu Val Ala Gly Pro His Leu Glu Arg Ser Glu Val Asp Arg
        275             280             285

Gly Thr Glu His Arg Ile Pro Lys Thr Asp Ala Pro Leu Thr Thr Ser
    290             295             300

Asn Asp Lys Arg Arg Phe Ser Lys Gly Gly Lys Thr Asp Phe Gln Ser
305             310             315             320

Ser Asp Cys Leu Ala Arg Ser Lys Glu Glu Val Gly Arg Ile Trp Lys
            325             330             335

Met Glu Leu Leu Lys Glu Ser Asp Gly Leu Gly Ile Gln Val Ser Gly
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58

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Gly Arg Gly Ser Lys Arg Ser Pro His Ala Ile Val Val Thr Gln Val
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Lys Glu Gly Gly Ala Ala His Arg Leu Arg Asp Gly Arg Leu Ser Leu
    370             375             380

Gly Asp Glu Leu Leu Val Ile Asn Gly His Leu Leu Val Gly Leu Ser
385             390             395             400

His Glu Glu Ala Val Ala Ile Leu Arg Ser Ala Thr Gly Met Val Gln
            405             410             415

Leu Val Val Ala Ser Lys Val Gly Val Leu Ser Ala Phe Gln Met Pro
        420             425             430

Gly Thr Asp Glu Pro Gln Asp Val Cys Gly Ala Glu Glu Ser Lys Gly
        435             440             445

Asn Leu Glu Ser Pro Lys Gln Gly Ser Asn Lys Ile Lys Leu Lys Ser
    450             455             460

Arg Leu Ser Gly Arg Trp Gly Leu Tyr Leu Met Gln Pro Val Gly Gly
465             470             475             480

Val His Arg Leu Glu Ser Val Glu Glu Tyr Asn Glu Leu Met Val Arg
            485             490             495

Asn Gly Asp Pro Arg Ile Arg Met Leu Glu Val Ser Arg Asp Gly Arg
            500             505             510

Lys His Ser Leu Pro Gln Leu Leu Asp Ser Ser Ser Ala Ser Gln Glu
        515             520             525

Tyr His Ile Val Lys Lys Ser Thr Arg Ser Leu Ser Thr Thr Gln Val
    530             535             540

Glu Ser Pro Trp Arg Leu Ile Arg Pro Ser Val Ile Ser Ile Ile Gly
545             550             555             560

Leu Tyr Lys Glu Lys Gly Lys Gly Leu Gly Phe Ser Ile Ala Gly Gly
            565             570             575

Arg Asp Cys Ile Arg Gly Gln Met Gly Ile Phe Val Lys Thr Ile Phe
        580             585             590

Pro Asn Gly Ser Ala Ala Glu Asp Gly Arg Leu Lys Glu Gly Asp Glu
        595             600             605

Ile Leu Asp Val Asn Gly Ile Pro Ile Lys Gly Leu Thr Phe Gln Glu
    610             615             620

Ala Ile His Thr Phe Lys Gln Ile Arg Ser Gly Leu Phe Val Leu Thr
625             630             635             640

Val Arg Thr Lys Leu Val Ser Pro Ser Leu Thr Pro Cys Ser Thr Pro
        645             650             655
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Thr His Met Ser Arg Ser Ala Ser Pro Asn Phe Asn Thr Ser Gly Gly
            660             665             670

Ala Ser Ala Gly Gly Ser Asp Glu Gly Ser Ser Ser Ser Leu Gly Arg
        675             680             685

Lys Thr Pro Gly Pro Lys Asp Arg Ile Val Met Glu Val Thr Leu Asn
    690             695             700

Lys Glu Pro Arg Val Gly Leu Gly Ile Gly Ala Cys Cys Leu Ala Leu
705             710             715             720

Glu Asn Ser Pro Pro Gly Ile Tyr Ile His Ser Leu Ala Pro Gly Ser
            725             730             735

Val Ala Lys Met Glu Ser Asn Leu Ser Arg Gly Ser Ile Leu Glu Val
        740             745             750

Asn Ser Val Asn Val Arg His Ala Ala Leu Ser Lys Val His Ala Ile
        755             760             765

Leu Ser Lys Cys Pro Pro Gly Pro Val Arg Leu Val Ile Gly Arg His
    770             775             780

Pro Asn Pro Lys Val Asn Gln Val Ser Glu Gln Glu Met Asp Glu Val
785             790             795             800

Ile Ala Arg Ser Thr Tyr Gln Glu Ser Lys Glu Ala Asn Ser Ser Pro
            805             810             815

Gly Leu Gly Thr Val Ile Ser Ile Gly Cys Phe Leu Leu Gln Gln Asp
            820             825             830

Ser Leu Ile Ser Glu Ser Glu Leu Ser Gln Tyr Phe Ala His Asp Val
        835             840             845

Pro Gly Pro Leu Ser Asp Phe Met Val Ala Gly Ser Glu Asp Glu Asp
    850             855             860

His Pro Gly Ser Gly Cys Ser Thr Ser Glu Glu Gly Ser Leu Pro Pro
865             870             875             880

Ser Thr Ser Thr His Lys Glu Pro Gly Lys Pro Arg Ala Asn Ser Leu
            885             890             895

Val Thr Leu Gly Ser His Arg Ala Ser Gly Leu Phe His Lys Gln Val
        900             905             910

Thr Val Ala Arg Gln Ala Ser Leu Pro Gly Ser Pro Gln Ala Leu Arg
        915             920             925

Asn Pro Leu Leu Arg Gln Arg Lys Val Gly Cys Tyr Asp Ala Asn Asp
    930             935             940

Ala Ser Asp Glu Glu Glu Phe Asp Arg Glu Gly Asp Cys Ile Ser Leu
945             950             955             960
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60

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Pro Gly Ala Leu Pro Gly Pro Ile Arg Pro Leu Ser Glu Asp Asp Pro
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Arg Arg Val Ser Ile Ser Ser Ser Lys Gly Met Asp Val His Asn Gln
            980                 985                 990

Glu Glu Arg Pro Arg Lys Thr Leu Val Ser Lys Ala Ile Ser Ala Pro
            995                1000                1005

Leu Leu Gly Ser Ser Val Asp Leu Glu Glu Ser Ile Pro Glu Gly Met
    1010                1015                1020

Val Asp Ala Ala Ser Tyr Ala Ala Asn Leu Thr Asp Ser Ala Glu Ala
1025                1030                1035                1040

Pro Lys Gly Ser Pro Gly Ser Trp Trp Lys Lys Glu Leu Ser Gly Ser
            1045                1050                1055

Ser Ser Ala Pro Lys Leu Glu Tyr Thr Val Arg Thr Asp Thr Gln Ser
            1060                1065                1070

Pro Thr Asn Thr Gly Ser Pro Ser Ser Pro Gln Gln Lys Ser Glu Gly
        1075                1080                1085

Leu Gly Ser Arg His Arg Pro Val Ala Arg Val Ser Pro His Cys Lys
    1090                1095                1100

Arg Ser Glu Ala Glu Ala Lys Pro Ser Gly Ser Gln Thr Val Asn Leu
1105                1110                1115                1120

Thr Gly Arg Ala Asn Asp Pro Cys Asp Leu Asp Ser Arg Val Gln Ala
            1125                1130                1135

Thr Ser Val Lys Val Thr Val Ala Gly Phe Gln Pro Gly Gly Ala Val
            1140                1145                1150

Glu Lys Glu Ser Leu Gly Lys Leu Thr Thr Gly Asp Ala Cys Val Ser
        1155                1160                1165

Thr Ser Cys Glu Leu Ala Ser Ala Leu Ser His Leu Asp Ala Ser His
    1170                1175                1180

Leu Thr Glu Asn Leu Pro Lys Ala Ala Ser Glu Leu Gly Gln Gln Pro
1185                1190                1195                1200

Met Thr Glu Leu Asp Ser Ser Ser Asp Leu Ile Ser Ser Pro Gly Lys
            1205                1210                1215

Lys Gly Ala Ala His Pro Asp Pro Ser Lys Thr Ser Val Asp Thr Gly
        1220                1225                1230

Lys Val Ser Arg Pro Glu Asn Pro Ser Gln Pro Ala Ser Pro Arg Val
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Ala Lys Cys Lys Ala Arg Ser Pro Val Arg Leu Pro His Glu Gly Ser
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Pro Ser Pro Gly Glu Lys Ala Ala Ala Pro Pro Asp Tyr Ser Lys Thr
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Arg Ser Ala Ser Glu Thr Ser Thr Pro His Asn Thr Arg Arg Val Ala
         1285           1290           1295

Ala Leu Arg Gly Ala Gly Pro Gly Ala Glu Gly Met Thr Pro Ala Gly
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Ala Val Leu Pro Gly Asp Pro Leu Thr Ser Gln Glu Gln Arg Gln Gly
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Ala Pro Gly Asn His Ser Lys Ala Leu Glu Met Thr Gly Ile His Ala
     1330           1335           1340

Pro Glu Ser Ser Gln Glu Pro Ser Leu Leu Glu Gly Ala Asp Ser Val
1345           1350           1355           1360

Ser Ser Arg Ala Pro Gln Ala Ser Leu Ser Met Leu Pro Ser Thr Asp
         1365           1370           1375

Asn Thr Lys Glu Ala Cys Gly His Val Ser Gly His Cys Cys Pro Gly
         1380           1385           1390

Gly Ser Arg Glu Ser Pro Val Thr Asp Ile Asp Ser Phe Ile Lys Glu
     1395           1400           1405

Leu Asp Ala Ser Ala Ala Arg Ser Pro Ser Ser Gln Thr Gly Asp Ser
     1410           1415           1420

Gly Ser Gln Glu Gly Ser Ala Gln Gly His Pro Pro Ala Gly Ala Gly
1425           1430           1435           1440

Gly Gly Ser Ser Cys Arg Ala Glu Pro Val Pro Gly Gly Gln Thr Ser
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Ser Pro Arg Arg Ala Trp Ala Ala Gly Ala Pro Ala Tyr Pro Gln Trp
         1460           1465           1470

Ala Ser Gln Pro Ser Val Leu Asp Ser Ile Asn Pro Asp Lys His Phe
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Thr Val Asn Lys Asn Phe Leu Ser Asn Tyr Ser Arg Asn Phe Ser Ser
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Phe His Glu Asp Ser Thr Ser Leu Ser Gly Leu Gly Asp Ser Thr Glu
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Pro Ser Leu Ser Ser Met Tyr Gly Asp Ala Glu Asp Ser Ser Ser Asp
         1525           1530           1535

Pro Glu Ser Leu Thr Glu Ala Pro Arg Ala Ser Ala Arg Asp Gly Trp
         1540           1545           1550

Ser Pro Pro Arg Ser Arg Val Ser Leu His Lys Glu Asp Pro Ser Glu
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Ser Glu Glu Glu Gln Ile Glu Ile Cys Ser Thr Arg Gly Cys Pro Asn
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Pro Pro Ser Ser Pro Ala His Leu Pro Thr Gln Ala Ala Ile Cys Pro
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Ala Ser Ala Lys Val Leu Ser Leu Lys Tyr Ser Thr Pro Arg Glu Ser
            1605   1610   1615

Val Ala Ser Pro Arg Glu Lys Val Ala Cys Leu Pro Gly Ser Tyr Thr
            1620   1625   1630

Ser Gly Pro Asp Ser Ser Gln Pro Ser Ser Leu Leu Glu Met Ser Ser
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Gln Glu His Glu Thr His Ala Asp Ile Ser Thr Ser Gln Asn His Arg
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Pro Ser Cys Ala Glu Glu Thr Thr Glu Val Thr Ser Ala Ser Ser Ala
1665   1670   1675   1680

Met Glu Asn Ser Pro Leu Ser Lys Val Ala Arg His Phe His Ser Pro
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Pro Ile Ile Leu Ser Ser Pro Asn Met Val Asn Gly Leu Glu His Asp
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Leu Leu Asp Asp Glu Thr Leu Asn Gln Tyr Glu Thr Ser Ile Asn Ala
            1715   1720   1725

Ala Ala Ser Leu Ser Ser Phe Ser Val Asp Val Pro Lys Asn Gly Glu
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Ser Val Leu Glu Asn Leu His Ile Ser Glu Ser Gln Asp Leu Asp Asp
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Leu Leu Gln Lys Pro Lys Met Ile Ala Arg Arg Pro Ile Met Ala Trp
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Phe Lys Glu Ile Asn Lys His Asn Gln Gly Thr His Leu Arg Ser Lys
            1780   1785   1790

Thr Glu Lys Glu Gln Pro Leu Met Pro Ala Arg Ser Pro Asp Ser Lys
            1795   1800   1805

Ile Gln Met Val Ser Ser Ser Gln Lys Lys Gly Val Thr Val Pro His
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Ser Pro Pro Gln Pro Lys Thr Asn Leu Glu Asn Lys Asp Leu Ser Lys
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Lys Ser Pro Ala Glu Met Leu Leu Thr Asn Gly Gln Lys Ala Lys Cys
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Gly Pro Lys Leu Lys Arg Leu Ser Leu Lys Gly Lys Ala Lys Val Asn
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Ser Glu Ala Pro Ala Ala Asn Ala Val Lys Ala Gly Gly Thr Asp His
    1875   1880   1885

Arg Lys Pro Leu Ile Ser Pro Gln Thr Ser His Lys Thr Leu Ser Lys
    1890   1895   1900

Ala Val Ser Gln Arg Leu His Val Ala Asp His Glu Asp Pro Asp Arg
1905   1910   1915   1920

Asn Thr Thr Ala Ala Pro Arg Ser Pro Gln Cys Val Leu Glu Ser Lys
              1925   1930   1935

Pro Pro Leu Ala Thr Ser Gly Pro Leu Lys Pro Ser Val Ser Asp Thr
              1940   1945   1950

Ser Ile Arg Thr Phe Val Ser Pro Leu Thr Ser Pro Lys Pro Val Pro
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Glu Gln Gly Met Trp Ser Arg Phe His Met Ala Val Leu Ser Glu Pro
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Asp Arg Gly Cys Pro Thr Thr Pro Lys Ser Pro Lys Cys Arg Ala Glu
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Gly Arg Ala Pro Arg Ala Asp Ser Gly Pro Val Ser Pro Ala Ala Ser
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Arg Asn Gly Met Ser Val Ala Gly Asn Arg Gln Ser Glu Pro Arg Leu
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Ala Ser His Val Ala Ala Asp Thr Ala Gln Pro Arg Pro Thr Gly Glu
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Leu Lys Ile Val Glu Ile Ser Ala Glu Ala Val Ser Glu Thr Val Cys
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Gly Asn Lys Pro Ala Glu Ser Asp Arg Arg Gly Gly Cys Leu Ala Gln
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Gly Asn Cys Gln Glu Lys Ser Glu Ile Arg Leu Tyr Arg Gln Val Ala
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Glu Ser Ser Thr Ser His Pro Ser Ser Leu Pro Ser His Ala Ser Gln
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Ala Glu Gln Glu Met Ser Arg Ser Phe Ser Met Ala Lys Leu Ala Ser
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Ser Ser Ser Ser Leu Gln Thr Ala Ile Arg Lys Ala Glu Tyr Ser Gln
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Gly Lys Ser Ser Leu Met Ser Asp Ser Arg Gly Val Pro Arg Asn Ser
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Ile Pro Gly Gly Pro Ser Gly Glu Asp His Leu Tyr Phe Thr Pro Arg
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Pro Ala Thr Arg Thr Tyr Ser Met Pro Ala Gln Phe Ser Ser His Phe
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Gly Arg Glu Gly His Pro Pro His Ser Leu Gly Arg Ser Arg Asp Ser
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Ile Ile Ser Val Gln Glu Thr Ser Cys Leu Val Thr Asp Lys Ile Lys
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Val Thr Arg Arg His Tyr Cys Tyr Glu Gln Asn Trp Pro His Glu Ser
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Thr Ser Phe Phe Ser Val Lys Gln Arg Ile Lys Ser Phe Glu Asn Leu
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Ala Asn Ala Asp Arg Pro Val Ala Lys Ser Gly Ala Ser Pro Phe Leu
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Ser Val Ser Ser Lys Pro Pro Ile Gly Arg Arg Ser Ser Gly Ser Ile
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Ser Arg Gln Asn Pro Pro Glu Thr Ser Ser Lys Gly Ser Asp Ser Glu
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Leu Ala His Gly Asn Val Leu Lys Val Leu His Gln Ala Gln Leu His
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Ser Ala Arg Gln Glu Pro Pro Thr Ala Asn Gly Lys Gly Leu Leu Ser
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Arg Lys Thr Ile Pro Leu Glu Pro Gly Ile Gly Arg Ser Val Ala Val
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His Asp Ala Leu Cys Val Glu Val Leu Lys Thr Ser Ala Gly Leu Gly
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Leu Ser Leu Asp Gly Gly Lys Ser Ser Val Thr Gly Asp Gly Pro Leu
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Val Ile Lys Arg Val Tyr Lys Gly Gly Ala Ala Glu Gln Ala Gly Ile
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Ile Glu Ala Gly Asp Glu Ile Leu Ala Ile Asn Gly Lys Pro Leu Val
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Gly Leu Met His Phe Asp Ala Trp Asn Ile Met Lys Ser Val Pro Glu
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Asn Phe Ala Val Asp Glu Ser Thr Val Pro Pro Asp His Ser Pro Pro
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Glu Met Glu Ile Cys Thr Val Tyr Leu Thr Lys Glu Leu Gly Asp Thr
65                  70                  75                  80

Glu Thr Val Gly Leu Ser Phe Gly Asn Ile Pro Val Phe Gly Asp Tyr
                85                  90                  95

Gly Glu Lys Arg Arg Gly Gly Lys Lys Arg Lys Thr His Gln Gly Pro
            100                 105                 110

Val Leu Asp Val Gly Cys Ile Trp Val Thr Glu Leu Arg Lys Asn Ser
        115                 120                 125

Pro Ala Gly Lys Ser Gly Lys Val Arg Leu Arg Asp Glu Ile Leu Ser
    130                 135                 140

Leu Asn Gly Gln Leu Met Val Gly Val Asp Val Ser Gly Ala Ser Tyr
145                 150                 155                 160

Leu Ala Glu Gln Cys Trp Asn Gly Gly Phe Ile Tyr Leu Ile Met Leu
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Arg Arg Phe Lys His Lys Ala His Ser Thr Tyr Asn Gly Asn Ser Ser
            180                 185                 190

Asn Ser Ser Glu Pro Gly Glu Thr Pro Thr Leu Glu Leu Gly Asp Arg
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Thr Ala Lys Lys Gly Lys Arg Thr Arg Lys Phe Gly Val Ile Ser Arg
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Pro Pro Ala Asn Lys Ala Pro Glu Glu Ser Lys Gly Ser Ala Gly Cys
225                 230                 235                 240

Glu Val Ser Ser Asp Pro Ser Thr Glu Leu Glu Asn Gly Leu Asp Pro
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Glu Leu Gly Asn Gly His Val Phe Gln Leu Glu Asn Gly Pro Asp Ser
            260                 265                 270

Leu Lys Glu Val Ala Gly Pro His Leu Glu Arg Ser Glu Val Asp Arg
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Gly Thr Glu His Arg Ile Pro Lys Thr Asp Ala Pro Leu Thr Thr Ser
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Asn Asp Lys Arg Arg Phe Ser Lys Gly Gly Lys Thr Asp Phe Gln Ser
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Gly Asp Glu Leu Leu Val Ile Asn Gly His Leu Leu Val Gly Leu Ser
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His Glu Glu Ala Val Ala Ile Leu Arg Ser Ala Thr Gly Met Val Gln
                405               410               415

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            420               425               430

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Asn Leu Glu Ser Pro Lys Gln Gly Ser Asn Lys Ile Lys Leu Lys Ser
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Val His Arg Leu Glu Ser Val Glu Glu Tyr Asn Glu Leu Met Val Arg
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Lys His Ser Leu Pro Gln Leu Leu Asp Ser Ser Ser Ala Ser Gln Glu
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Tyr His Ile Val Lys Lys Ser Thr Arg Ser Leu Ser Thr Thr Gln Val
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Arg Asp Cys Ile Arg Gly Gln Met Gly Ile Phe Val Lys Thr Ile Phe
            580               585               590

Pro Asn Gly Ser Ala Ala Glu Asp Gly Arg Leu Lys Glu Gly Asp Glu
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Ile Leu Asp Val Asn Gly Ile Pro Ile Lys Gly Leu Thr Phe Gln Glu
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Ala Ile His Thr Phe Lys Gln Ile Arg Ser Gly Leu Phe Val Leu Thr
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Ala Ser Ala Gly Gly Ser Asp Glu Gly Ser Ser Ser Ser Leu Gly Arg
            675             680             685

Lys Thr Pro Gly Pro Lys Asp Arg Ile Val Met Glu Val Thr Leu Asn
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Lys Glu Pro Arg Val Gly Leu Gly Ile Gly Ala Cys Cys Leu Ala Leu
705             710             715             720

Glu Asn Ser Pro Pro Gly Ile Tyr Ile His Ser Leu Ala Pro Gly Ser
            725             730             735

Val Ala Lys Met Glu Ser Asn Leu Ser Arg Gly Asp Gln Ile Leu Glu
            740             745             750

Val Asn Ser Val Asn Val Arg His Ala Ala Leu Ser Lys Val His Ala
            755             760             765

Ile Leu Ser Lys Cys Pro Pro Gly Pro Val Arg Leu Val Ile Gly Arg
    770             775             780

His Pro Asn Pro Lys Val Ser Glu Gln Glu Met Asp Glu Val Ile Ala
785             790             795             800

Arg Ser Thr Tyr Gln Glu Ser Lys Glu Ala Asn Ser Ser Pro Gly Leu
            805             810             815

Gly Thr Pro Leu Lys Ser Pro Ser Leu Ala Lys Lys Asp Ser Leu Ile
            820             825             830

Ser Glu Ser Glu Leu Ser Gln Tyr Phe Ala His Asp Val Pro Gly Pro
            835             840             845

Leu Ser Asp Phe Met Val Val Gly Ser Glu Asp Glu Asp His Pro Gly
    850             855             860

Ser Gly Cys Ser Thr Ser Glu Glu Gly Ser Leu Pro Pro Ser Thr Ser
865             870             875             880

Thr His Lys Glu Pro Gly Lys Pro Arg Ala Asn Ser Leu Val Thr Leu
            885             890             895

Gly Ser His Arg Ala Ser Gly Leu Phe His Lys Gln Val Thr Val Ala
            900             905             910

Arg Gln Ala Ser Leu Pro Gly Ser Pro Gln Ala Leu Arg Asn Pro Leu
            915             920             925

Leu Arg Gln Arg Lys Val Gly Cys Tyr Asp Ala Asn Asp Ala Ser Asp
    930             935             940
```

72

```
Glu Glu Glu Phe Asp Arg Glu Gly Asp Cys Ile Ser Leu Pro Gly Ala
945             950             955             960

Leu Pro Gly Pro Ile Arg Pro Leu Ser Glu Asp Asp Pro Arg Arg Val
            965             970             975

Ser Ile Ser Ser Ser Lys Gly Met Asp Val His Asn Gln Glu Glu Arg
        980             985             990

Pro Arg Lys Thr Leu Val Ser Lys Ala Ile Ser Ala Pro Leu Leu Gly
    995             1000            1005

Ser Ser Val Asp Leu Glu Glu Ser Ile Pro Glu Gly Met Val Asp Ala
    1010            1015            1020

Ala Ser Tyr Ala Ala Asn Leu Thr Asp Ser Ala Glu Ala Pro Lys Gly
1025            1030            1035            1040

Ser Pro Gly Ser Trp Trp Lys Lys Glu Leu Ser Gly Ser Ser Ser Ala
            1045            1050            1055

Pro Lys Leu Glu Tyr Thr Val Arg Thr Asp Thr Gln Ser Pro Thr Asn
        1060            1065            1070

Thr Gly Ser Pro Ser Ser Pro Gln Gln Lys Ser Glu Gly Leu Gly Ser
    1075            1080            1085

Arg His Arg Pro Val Ala Arg Val Ser Pro His Cys Lys Arg Ser Glu
    1090            1095            1100

Ala Glu Ala Lys Pro Ser Gly Ser Gln Thr Val Asn Leu Thr Gly Arg
1105            1110            1115            1120

Ala Asn Asp Pro Cys Asp Leu Asp Ser Arg Val Gln Ala Thr Ser Val
            1125            1130            1135

Lys Val Thr Val Ala Gly Phe Gln Pro Gly Gly Ala Val Glu Lys Glu
        1140            1145            1150

Ser Leu Gly Lys Leu Thr Thr Gly Asp Ala Cys Val Ser Thr Ser Cys
    1155            1160            1165

Glu Leu Ala Ser Ala Leu Ser His Leu Asp Ala Ser His Leu Thr Glu
    1170            1175            1180

Asn Leu Pro Lys Ala Ala Ser Glu Leu Gly Gln Gln Pro Met Thr Glu
1185            1190            1195            1200

Leu Asp Ser Ser Ser Asp Leu Ile Ser Ser Pro Gly Lys Lys Gly Ala
            1205            1210            1215

Ala His Pro Asp Pro Ser Lys Thr Ser Val Asp Thr Gly Lys Val Ser
    1220            1225            1230

Arg Pro Glu Asn Pro Ser Gln Pro Ala Ser Pro Arg Val Ala Lys Cys
    1235            1240            1245
```

73

```
Lys Ala Arg Ser Pro Val Arg Leu Pro His Glu Gly Ser Pro Ser Pro
  1250              1255              1260

Gly Glu Lys Ala Ala Ala Pro Pro Asp Tyr Ser Lys Thr Arg Ser Ala
1265              1270              1275              1280

Ser Glu Thr Ser Thr Pro His Asn Thr Arg Arg Val Ala Ala Leu Arg
              1285              1290              1295

Gly Ala Gly Pro Gly Ala Glu Gly Met Thr Pro Ala Gly Ala Val Leu
              1300              1305              1310

Pro Gly Asp Pro Leu Thr Ser Gln Glu Gln Arg Gln Gly Ala Pro Gly
              1315              1320              1325

Asn His Ser Lys Ala Leu Glu Met Thr Gly Ile His Ala Pro Glu Ser
  1330              1335              1340

Ser Gln Glu Pro Ser Leu Leu Glu Gly Ala Asp Ser Val Ser Ser Arg
1345              1350              1355              1360

Ala Pro Gln Ala Ser Leu Ser Met Leu Pro Ser Thr Asp Asn Thr Lys
              1365              1370              1375

Glu Ala Cys Gly His Val Ser Gly His Cys Cys Pro Gly Gly Ser Arg
              1380              1385              1390

Glu Ser Pro Val Thr Asp Ile Asp Ser Phe Ile Lys Glu Leu Asp Ala
              1395              1400              1405

Ser Ala Ala Arg Ser Pro Ser Ser Gln Thr Gly Asp Ser Gly Ser Gln
  1410              1415              1420

Glu Gly Ser Ala Gln Gly His Pro Pro Ala Gly Ala Gly Gly Gly Ser
1425              1430              1435              1440

Ser Cys Arg Ala Glu Pro Val Pro Gly Gly Gln Thr Ser Ser Pro Arg
              1445              1450              1455

Arg Ala Trp Ala Ala Gly Ala Pro Ala Tyr Pro Gln Trp Ala Ser Gln
              1460              1465              1470

Pro Ser Val Leu Asp Ser Ile Asn Pro Asp Lys His Phe Thr Val Asn
              1475              1480              1485

Lys Asn Phe Leu Ser Asn Tyr Ser Arg Asn Phe Ser Ser Phe His Glu
  1490              1495              1500

Asp Ser Thr Ser Leu Ser Gly Leu Gly Asp Ser Thr Glu Pro Ser Leu
1505              1510              1515              1520

Ser Ser Met Tyr Gly Asp Ala Glu Asp Ser Ser Ser Asp Pro Glu Ser
              1525              1530              1535

Leu Thr Glu Ala Pro Arg Ala Ser Ala Arg Asp Gly Trp Ser Pro Pro
              1540              1545              1550
```

74

```
Arg Ser Arg Val Ser Leu His Lys Glu Asp Pro Ser Glu Ser Glu Glu
     1555              1560              1565

Glu Gln Ile Glu Ile Cys Ser Thr Arg Gly Cys Pro Asn Pro Pro Ser
    1570              1575              1580

Ser Pro Ala His Leu Pro Thr Gln Ala Ala Ile Cys Pro Ala Ser Ala
1585              1590              1595              1600

Lys Val Leu Ser Leu Lys Tyr Ser Thr Pro Arg Glu Ser Val Ala Ser
             1605              1610              1615

Pro Arg Glu Lys Val Ala Cys Leu Pro Gly Ser Tyr Thr Ser Gly Pro
             1620              1625              1630

Asp Ser Ser Gln Pro Ser Ser Leu Leu Glu Met Ser Ser Gln Glu His
         1635              1640              1645

Glu Thr His Ala Asp Ile Ser Thr Ser Gln Asn His Arg Pro Ser Cys
         1650              1655              1660

Ala Glu Glu Thr Thr Glu Val Thr Ser Ala Ser Ser Ala Met Glu Asn
1665              1670              1675              1680

Ser Pro Leu Ser Lys Val Ala Arg His Phe His Ser Pro Pro Ile Ile
             1685              1690              1695

Leu Ser Ser Pro Asn Met Val Asn Gly Leu Glu His Asp Leu Leu Asp
             1700              1705              1710

Asp Glu Thr Leu Asn Gln Tyr Glu Thr Ser Ile Asn Ala Ala Ala Ser
         1715              1720              1725

Leu Ser Ser Phe Ser Val Asp Val Pro Lys Asn Gly Glu Ser Val Leu
         1730              1735              1740

Glu Asn Leu His Ile Ser Glu Ser Gln Asp Leu Asp Asp Leu Leu Gln
1745              1750              1755              1760

Lys Pro Lys Met Ile Ala Arg Arg Pro Ile Met Ala Trp Phe Lys Glu
             1765              1770              1775

Ile Asn Lys His Asn Gln Gly Thr His Leu Arg Ser Lys Thr Glu Lys
             1780              1785              1790

Glu Gln Pro Leu Met Pro Ala Arg Ser Pro Asp Ser Lys Ile Gln Met
         1795              1800              1805

Val Ser Ser Ser Gln Lys Lys Gly Val Thr Val Pro His Ser Pro Pro
    1810              1815              1820

Gln Pro Lys Thr Asn Leu Glu Asn Lys Asp Leu Ser Lys Lys Ser Pro
1825              1830              1835              1840

Ala Glu Met Leu Leu Thr Asn Gly Gln Lys Ala Lys Cys Gly Pro Lys
             1845              1850              1855
```

75

Leu Lys Arg Leu Ser Leu Lys Gly Lys Ala Lys Val Asn Ser Glu Ala
          1860   1865   1870

Pro Ala Ala Asn Ala Val Lys Ala Gly Gly Thr Asp His Arg Lys Pro
          1875   1880   1885

Leu Ile Ser Pro Gln Thr Ser His Lys Thr Leu Ser Lys Ala Val Ser
     1890   1895   1900

Gln Arg Leu His Val Ala Asp His Glu Asp Pro Asp Arg Asn Thr Thr
1905   1910   1915   1920

Ala Ala Pro Arg Ser Pro Gln Cys Val Leu Glu Ser Lys Pro Pro Leu
          1925   1930   1935

Ala Thr Ser Gly Pro Leu Lys Pro Ser Val Ser Asp Thr Ser Ile Arg
          1940   1945   1950

Thr Phe Val Ser Pro Leu Thr Ser Pro Lys Pro Val Pro Glu Gln Gly
     1955   1960   1965

Met Trp Ser Arg Phe His Met Ala Val Leu Ser Glu Pro Asp Arg Gly
     1970   1975   1980

Cys Pro Thr Thr Pro Lys Ser Pro Lys Cys Arg Ala Glu Gly Arg Ala
1985   1990   1995   2000

Pro Arg Ala Asp Ser Gly Pro Val Ser Pro Ala Ala Ser Arg Asn Gly
          2005   2010   2015

Met Ser Val Ala Gly Asn Arg Gln Ser Glu Pro Arg Leu Ala Ser His
          2020   2025   2030

Val Ala Ala Asp Thr Ala Gln Pro Arg Pro Thr Gly Glu Lys Gly Gly
     2035   2040   2045

Asn Ile Met Ala Ser Asp Arg Leu Glu Arg Thr Asn Gln Leu Lys Ile
     2050   2055   2060

Val Glu Ile Ser Ala Glu Ala Val Ser Glu Thr Val Cys Gly Asn Lys
2065   2070   2075   2080

Pro Ala Glu Ser Asp Arg Arg Gly Gly Cys Leu Ala Gln Gly Asn Cys
          2085   2090   2095

Gln Glu Lys Ser Glu Ile Arg Leu Tyr Arg Gln Val Ala Glu Ser Ser
          2100   2105   2110

Thr Ser His Pro Ser Ser Leu Pro Ser His Ala Ser Gln Ala Glu Gln
     2115   2120   2125

Glu Met Ser Arg Ser Phe Ser Met Ala Lys Leu Ala Ser Ser Ser Ser
     2130   2135   2140

Ser Leu Gln Thr Ala Ile Arg Lys Ala Glu Tyr Ser Gln Gly Lys Ser
2145   2150   2155   2160

                                    76

```
Ser Leu Met Ser Asp Ser Arg Gly Val Pro Arg Asn Ser Ile Pro Gly
         2165                    2170                    2175

Gly Pro Ser Gly Glu Asp His Leu Tyr Phe Thr Pro Arg Pro Ala Thr
         2180                    2185                    2190

Arg Thr Tyr Ser Met Pro Ala Gln Phe Ser Ser His Phe Gly Arg Glu
         2195                    2200                    2205

Gly His Pro Pro His Ser Leu Gly Arg Ser Arg Asp Ser Gln Val Pro
    2210                    2215                    2220

Val Thr Ser Ser Val Val Pro Glu Ala Lys Ala Ser Arg Gly Gly Leu
2225                    2230                    2235                    2240

Pro Ser Leu Ala Asn Gly Gln Gly Ile Tyr Ser Val Lys Pro Leu Leu
              2245                    2250                    2255

Asp Thr Ser Arg Asn Leu Pro Ala Thr Asp Glu Gly Asp Ile Ile Ser
         2260                    2265                    2270

Val Gln Glu Thr Ser Cys Leu Val Thr Asp Lys Ile Lys Val Thr Arg
    2275                    2280                    2285

Arg His Tyr Cys Tyr Glu Gln Asn Trp Pro His Glu Ser Thr Ser Phe
    2290                    2295                    2300

Phe Ser Val Lys Gln Arg Ile Lys Ser Phe Glu Asn Leu Ala Asn Ala
2305                    2310                    2315                    2320

Asp Arg Pro Val Ala Lys Ser Gly Ala Ser Pro Phe Leu Ser Val Ser
              2325                    2330                    2335

Ser Lys Pro Pro Ile Gly Arg Arg Ser Ser Gly Ser Ile Val Ser Gly
         2340                    2345                    2350

Ser Leu Gly His Pro Gly Asp Ala Ala Ala Arg Leu Leu Arg Arg Ser
         2355                    2360                    2365

Leu Ser Ser Cys Ser Glu Asn Gln Ser Glu Ala Gly Thr Leu Leu Pro
    2370                    2375                    2380

Gln Met Ala Lys Ser Pro Ser Ile Met Thr Leu Thr Ile Ser Arg Gln
2385                    2390                    2395                    2400

Asn Pro Pro Glu Thr Ser Ser Lys Gly Ser Asp Ser Glu Leu Lys Lys
              2405                    2410                    2415

Ser Leu Gly Pro Leu Gly Ile Pro Thr Pro Thr Met Thr Leu Ala Ser
         2420                    2425                    2430

Pro Val Lys Arg Asn Lys Ser Ser Val Arg His Thr Gln Pro Ser Pro
    2435                    2440                    2445

Val Ser Arg Ser Lys Leu Gln Glu Leu Arg Ala Leu Ser Met Pro Asp
    2450                    2455                    2460
```

```
Leu Asp Lys Leu Cys Ser Glu Asp Tyr Ser Ala Gly Pro Ser Ala Val
2465                2470                2475                2480

Leu Phe Lys Thr Glu Leu Glu Ile Thr Pro Arg Arg Ser Pro Gly Pro
           2485                2490                2495

Pro Ala Gly Gly Val Ser Cys Pro Glu Lys Gly Gly Asn Arg Ala Cys
        2500                2505                2510

Pro Gly Gly Ser Gly Pro Lys Thr Ser Ala Ala Glu Thr Pro Ser Ser
        2515                2520                2525

Ala Ser Asp Thr Gly Glu Ala Ala Gln Asp Leu Pro Phe Arg Arg Ser
        2530                2535                2540

Trp Ser Val Asn Leu Asp Gln Leu Leu Val Ser Ala Gly Asp Gln Gln
2545                2550                2555                2560

Arg Leu Gln Ser Val Leu Ser Ser Val Gly Ser Lys Ser Thr Ile Leu
           2565                2570                2575

Thr Leu Ile Gln Glu Ala Lys Ala Gln Ser Glu Asn Glu Glu Asp Val
        2580                2585                2590

Cys Phe Ile Val Leu Asn Arg Lys Glu Gly Ser Gly Leu Gly Phe Ser
        2595                2600                2605

Val Ala Gly Gly Thr Asp Val Glu Pro Lys Ser Ile Thr Val His Arg
     2610                2615                2620

Val Phe Ser Gln Gly Ala Ala Ser Gln Glu Gly Thr Met Asn Arg Gly
2625                2630                2635                2640

Asp Phe Leu Leu Ser Val Asn Gly Ala Ser Leu Ala Gly Leu Ala His
           2645                2650                2655

Gly Asn Val Leu Lys Val Leu His Gln Ala Gln Leu His Lys Asp Ala
        2660                2665                2670

Leu Val Val Ile Lys Lys Gly Met Asp Gln Pro Arg Pro Ser Ala Arg
        2675                2680                2685

Gln Glu Pro Pro Thr Ala Asn Gly Lys Gly Leu Leu Ser Arg Lys Thr
     2690                2695                2700

Ile Pro Leu Glu Pro Gly Ile Gly Arg Ser Val Ala Val His Asp Ala
2705                2710                2715                2720

Leu Cys Val Glu Val Leu Lys Thr Ser Ala Gly Leu Gly Leu Ser Leu
           2725                2730                2735

Asp Gly Gly Lys Ser Ser Val Thr Gly Asp Gly Pro Leu Val Ile Lys
        2740                2745                2750

Arg Val Tyr Lys Gly Gly Ala Ala Glu Gln Ala Gly Ile Ile Glu Ala
        2755                2760                2765
```

```
Gly Asp Glu Ile Leu Ala Ile Asn Gly Lys Pro Leu Val Gly Leu Met
    2770                2775                2780

His Phe Asp Ala Trp Asn Ile Met Lys Ser Val Pro Glu Gly Pro Val
2785                2790                2795                2800

Gln Leu Leu Ile Arg Lys His Arg Asn Ser Ser
              2805                2810


<210> 28
<211> 798
<212> PRT
<213> Homo sapiens

<400> 28
Met Leu Ile Asn Cys Glu Ala Lys Gly Ile Lys Met Val Ser Glu Ile
  1               5               10               15

Ser Val Pro Pro Ser Arg Pro Phe Gln Leu Ser Leu Leu Asn Asn Gly
              20               25               30

Leu Thr Met Leu His Thr Asn Asp Phe Ser Gly Leu Thr Asn Ala Ile
          35               40               45

Ser Ile His Leu Gly Phe Asn Asn Ile Ala Asp Ile Glu Ile Gly Ala
      50               55               60

Phe Asn Gly Leu Gly Leu Leu Lys Gln Leu His Ile Asn His Asn Ser
 65               70               75               80

Leu Glu Ile Leu Lys Glu Asp Thr Phe His Gly Leu Glu Asn Leu Glu
              85               90               95

Phe Leu Gln Ala Asp Asn Asn Phe Ile Thr Val Ile Glu Pro Ser Ala
              100              105              110

Phe Ser Lys Leu Asn Arg Leu Lys Val Leu Ile Leu Asn Asp Asn Ala
      115              120               125

Ile Glu Ser Leu Pro Pro Asn Ile Phe Arg Phe Val Pro Leu Thr His
      130              135              140

Leu Asp Leu Arg Gly Asn Gln Leu Gln Thr Leu Pro Tyr Val Gly Phe
145              150              155              160

Leu Glu His Ile Gly Arg Ile Leu Asp Leu Gln Leu Glu Asp Asn Lys
              165              170              175

Trp Ala Cys Asn Cys Asp Leu Leu Gln Leu Lys Thr Trp Leu Glu Asn
          180              185              190

Met Pro Pro Gln Ser Ile Ile Gly Asp Val Val Cys Asn Ser Pro Pro
      195              200              205

Phe Phe Lys Gly Ser Ile Leu Ser Arg Leu Lys Lys Glu Ser Ile Cys
    210              215              220
```

```
Pro Thr Pro Pro Val Tyr Glu Glu His Glu Asp Pro Ser Gly Ser Leu
225             230             235                 240

His Leu Ala Ala Thr Ser Ser Ile Asn Asp Ser Arg Met Ser Thr Lys
            245             250                 255

Thr Thr Ser Ile Leu Lys Leu Pro Thr Lys Ala Pro Gly Leu Ile Pro
            260             265                 270

Tyr Ile Thr Lys Pro Ser Thr Gln Leu Pro Gly Pro Tyr Cys Pro Ile
        275             280                 285

Pro Cys Asn Cys Lys Val Leu Ser Pro Ser Gly Leu Leu Ile His Cys
    290             295                 300

Gln Glu Arg Asn Ile Glu Ser Leu Ser Asp Leu Arg Pro Pro Pro Gln
305             310                 315                 320

Asn Pro Arg Lys Leu Ile Leu Ala Gly Asn Ile Ile His Ser Leu Met
            325                 330                 335

Lys Ser Asp Leu Val Glu Tyr Phe Thr Leu Glu Met Leu His Leu Gly
        340             345                 350

Asn Asn Arg Ile Glu Val Leu Glu Glu Gly Ser Phe Met Asn Leu Thr
        355             360                 365

Arg Leu Gln Lys Leu Tyr Leu Asn Gly Asn His Leu Thr Lys Leu Ser
    370             375                 380

Lys Gly Met Phe Leu Gly Leu His Asn Leu Glu Tyr Leu Tyr Leu Glu
385             390                 395                 400

Tyr Asn Ala Ile Lys Glu Ile Leu Pro Gly Thr Phe Asn Pro Met Pro
            405                 410                 415

Lys Leu Lys Val Leu Tyr Leu Asn Asn Asn Leu Leu Gln Val Leu Pro
        420             425                 430

Pro His Ile Phe Ser Gly Val Pro Leu Thr Lys Val Asn Leu Lys Thr
        435             440                 445

Asn Gln Phe Thr His Leu Pro Val Ser Asn Ile Leu Asp Asp Leu Asp
    450             455                 460

Leu Leu Thr Gln Ile Asp Leu Glu Asp Asn Pro Trp Asp Cys Ser Cys
465             470                 475                 480

Asp Leu Val Gly Leu Gln Gln Trp Ile Gln Lys Leu Ser Lys Asn Thr
            485             490                 495

Val Thr Asp Asp Ile Leu Cys Thr Ser Pro Gly His Leu Asp Lys Lys
        500             505                 510

Glu Leu Lys Ala Leu Asn Ser Glu Ile Leu Cys Pro Gly Leu Val Asn
    515             520                 525
```

80

```
Asn Pro Ser Met Pro Thr Gln Thr Ser Tyr Leu Met Val Thr Thr Pro
    530             535             540

Ala Thr Thr Thr Asn Thr Ala Asp Thr Ile Leu Arg Ser Leu Thr Asp
545             550             555             560

Ala Val Pro Leu Ser Val Leu Ile Leu Gly Leu Leu Ile Met Phe Ile
                565             570             575

Thr Ile Val Phe Cys Ala Ala Gly Ile Val Val Leu Val Leu His Arg
            580             585             590

Arg Arg Arg Tyr Lys Lys Lys Gln Val Asp Glu Gln Met Arg Asp Asn
        595             600             605

Ser Pro Val His Leu Gln Tyr Ser Met Tyr Gly His Lys Thr Thr His
    610             615             620

His Thr Thr Glu Arg Pro Ser Ala Ser Leu Tyr Glu Gln His Met Val
625             630             635             640

Ser Pro Met Val His Val Tyr Arg Ser Pro Ser Phe Gly Pro Lys His
            645             650             655

Leu Glu Glu Glu Glu Arg Asn Glu Lys Glu Gly Ser Asp Ala Lys
        660             665             670

His Leu Gln Arg Ser Leu Leu Glu Gln Glu Asn His Ser Pro Leu Thr
    675             680             685

Gly Ser Asn Met Lys Tyr Lys Thr Thr Asn Gln Ser Thr Glu Phe Leu
    690             695             700

Ser Phe Gln Asp Ala Ser Ser Leu Tyr Arg Asn Ile Leu Glu Lys Glu
705             710             715             720

Arg Glu Leu Gln Gln Leu Gly Ile Thr Glu Tyr Leu Arg Lys Asn Ile
            725             730             735

Ala Gln Leu Gln Pro Asp Met Glu Ala His Tyr Pro Gly Ala His Glu
            740             745             750

Glu Leu Lys Leu Met Glu Thr Leu Met Tyr Ser Arg Pro Arg Lys Val
        755             760             765

Leu Val Glu Gln Thr Lys Asn Glu Tyr Phe Glu Leu Lys Ala Asn Leu
    770             775             780

His Ala Glu Pro Asp Tyr Leu Glu Val Leu Glu Gln Gln Thr
785             790             795
```

<210> 29
<211> 440
<212> PRT
<213> Homo sapiens

81

<400> 29
```
Met Leu Ile Asn Cys Glu Ala Lys Gly Ile Lys Met Val Ser Glu Ile
1                   5                  10                  15

Ser Val Pro Pro Ser Arg Pro Phe Gln Leu Ser Leu Leu Asn Asn Gly
            20                  25                  30

Leu Thr Met Leu His Thr Asn Asp Phe Ser Gly Leu Thr Asn Ala Ile
        35                  40                  45

Ser Ile His Leu Gly Phe Asn Asn Ile Ala Asp Ile Glu Ile Gly Ala
    50                  55                  60

Phe Asn Gly Leu Gly Leu Leu Lys Gln Leu His Ile Asn His Asn Ser
65                  70                  75                  80

Leu Glu Ile Leu Lys Glu Asp Thr Phe His Gly Leu Glu Asn Leu Glu
            85                  90                  95

Phe Leu Gln Ala Asp Asn Asn Phe Ile Thr Val Ile Glu Pro Ser Ala
        100     ·               105                 110

Phe Ser Lys Leu Asn Arg Leu Lys Val Leu Ile Leu Asn Asp Asn Ala
        115                 120                 125

Ile Glu Ser Leu Pro Pro Asn Ile Phe Arg Phe Val Pro Leu Thr His
    130                 135                 140

Leu Asp Leu Arg Gly Asn Gln Leu Gln Thr Leu Pro Tyr Val Gly Phe
145                 150                 155                 160

Leu Glu His Ile Gly Arg Ile Leu Asp Leu Gln Leu Glu Asp Asn Lys
            165                 170                 175

Trp Ala Cys Asn Cys Asp Leu Leu Gln Leu Lys Thr Trp Leu Glu Asn
        180                 185                 190

Met Pro Pro Gln Ser Ile Ile Gly Asp Val Val Cys Asn Ser Pro Pro
        195                 200                 205

Phe Phe Lys Gly Ser Ile Leu Ser Arg Leu Lys Lys Glu Ser Ile Cys
    210                 215                 220

Pro Thr Pro Pro Val Tyr Glu Glu His Glu Asp Pro Ser Gly Ser Leu
225                 230                 235                 240

His Leu Ala Ala Thr Ser Ser Ile Asn Asp Ser Arg Met Ser Thr Lys
            245                 250                 255

Thr Thr Ser Ile Leu Lys Leu Pro Thr Lys Ala Pro Gly Leu Ile Pro
        260                 265                 270

Tyr Ile Thr Lys Pro Ser Thr Gln Leu Pro Gly Pro Tyr Cys Pro Ile
    275                 280                 285

Pro Cys Asn Cys Lys Val Leu Ser Pro Ser Gly Leu Leu Ile His Cys
```

82

```
Gln Glu Arg Asn Ile Glu Ser Leu Ser Asp Leu Arg Pro Pro Pro Gln
305                 310                 315                 320

Asn Pro Arg Lys Leu Ile Leu Ala Gly Asn Ile Ile His Ser Leu Met
                325                 330                 335

Lys Ser Asp Leu Val Glu Tyr Phe Thr Leu Glu Met Leu His Leu Gly
            340                 345                 350

Asn Asn Arg Ile Glu Val Leu Glu Glu Gly Ser Phe Met Asn Leu Thr
            355                 360                 365

Arg Leu Gln Lys Leu Tyr Leu Asn Gly Asn His Leu Thr Lys Leu Ser
    370                 375                 380

Lys Gly Met Phe Leu Gly Leu His Asn Leu Glu Tyr Leu Tyr Leu Glu
385                 390                 395                 400

Tyr Asn Ala Ile Lys Glu Ile Leu Pro Gly Thr Phe Asn Pro Met Pro
            405                 410                 415

Lys Leu Lys Val Leu Tyr Leu Asn Asn Thr Ser Ser Lys Phe Tyr His
            420                 425                 430

His Ile Phe Phe Gln Gly Phe Leu
        435                 440
```

```
<210> 30
<211> 853
<212> PRT
<213> Homo sapiens

<400> 30
Tyr Phe Ser Leu Phe Arg Ser Ile Gln Leu Phe Ala Asp Cys Lys Lys
 1               5                   10                  15

Met Phe Leu Trp Leu Phe Leu Ile Leu Ser Ala Leu Ile Ser Ser Thr
            20                  25                  30

Asn Ala Asp Ser Asp Ile Ser Val Glu Ile Cys Asn Val Cys Ser Cys
        35                  40                  45

Val Ser Val Glu Asn Val Leu Tyr Val Asn Cys Glu Lys Val Ser Val
    50                  55                  60

Tyr Arg Pro Asn Gln Leu Lys Pro Pro Trp Ser Asn Phe Tyr His Leu
65                  70                  75                  80

Asn Phe Gln Asn Asn Phe Leu Asn Ile Leu Tyr Pro Asn Thr Phe Leu
                85                  90                  95

Asn Phe Ser His Ala Val Ser Leu His Leu Gly Asn Asn Lys Leu Gln
            100                 105                 110
```

```
Asn Ile Glu Gly Gly Ala Phe Leu Gly Leu Ser Ala Leu Lys Gln Leu
        115             120             125

His Leu Asn Asn Asn Glu Leu Lys Ile Leu Arg Ala Asp Thr Phe Leu
        130             135             140

Gly Ile Glu Asn Leu Glu Tyr Leu Gln Ala Asp Tyr Asn Leu Ile Lys
145             150             155             160

Tyr Ile Glu Arg Gly Ala Phe Asn Lys Leu His Lys Leu Lys Val Leu
            165             170             175

Ile Leu Asn Asp Asn Leu Ile Ser Phe Leu Pro Asp Asn Ile Phe Arg
        180             185             190

Phe Ala Ser Leu Thr His Leu Asp Ile Arg Gly Asn Arg Ile Gln Lys
        195             200             205

Leu Pro Tyr Ile Gly Val Leu Glu His Ile Gly Arg Val Val Glu Leu
    210             215             220

Gln Leu Glu Asp Asn Pro Trp Asn Cys Ser Cys Asp Leu Leu Pro Leu
225             230             235             240

Lys Ala Trp Leu Glu Asn Met Pro Tyr Asn Ile Tyr Ile Gly Glu Ala
            245             250             255

Ile Cys Glu Thr Pro Ser Asp Leu Tyr Gly Arg Leu Leu Lys Glu Thr
        260             265             270

Asn Lys Gln Glu Leu Cys Pro Met Gly Thr Gly Ser Asp Phe Asp Val
        275             280             285

Arg Ile Leu Pro Pro Ser Gln Leu Glu Asn Gly Tyr Thr Thr Pro Asn
    290             295             300

Gly His Thr Thr Gln Thr Ser Leu His Arg Leu Val Thr Lys Pro Pro
305             310             315             320

Lys Thr Thr Asn Pro Ser Lys Ile Ser Gly Ile Val Ala Gly Lys Ala
            325             330             335

Leu Ser Asn Arg Asn Leu Ser Gln Ile Val Ser Tyr Gln Thr Arg Val
        340             345             350

Pro Pro Leu Thr Pro Cys Pro Ala Pro Cys Phe Cys Lys Thr His Pro
        355             360             365

Ser Asp Leu Gly Leu Ser Val Asn Cys Gln Glu Lys Asn Ile Gln Ser
    370             375             380

Met Ser Glu Leu Ile Pro Lys Pro Leu Asn Ala Lys Lys Leu His Val
385             390             395             400

Asn Gly Asn Ser Ile Lys Asp Val Asp Val Ser Asp Phe Thr Asp Phe
            405             410             415


                                84
```

Glu Gly Leu Asp Leu Leu His Leu Gly Ser Asn Gln Ile Thr Val Ile
        420   425   430

Lys Gly Asp Val Phe His Asn Leu Thr Asn Leu Arg Arg Leu ·Tyr Leu
        435   440   445

Asn Gly Asn Gln Ile Glu Arg Leu Tyr Pro Glu Ile Phe Ser Gly Leu
        450   455   460

His Asn Leu Gln Tyr Leu Tyr Leu Glu Tyr Asn Leu Ile Lys Glu Ile
465   470   475   480

Ser Ala Gly Thr Phe Asp Ser Met Pro Asn Leu Gln Leu Leu Tyr Leu
                485   490   495

Asn Asn Asn Leu Leu Lys Ser Leu Pro Val Tyr Ile Phe Ser Gly Ala
            500   505   510

Pro Leu Ala Arg Leu Asn Leu Arg Asn Asn Lys Phe Met Tyr Leu Pro
            515   520   525

Val Ser Gly Val Leu Asp Gln Leu Gln Ser Leu Thr Gln Ile Asp Leu
    530   535   540

Glu Gly Asn Pro Trp Asp Cys Thr Cys Asp Leu Val Ala Leu Lys Leu
545   550   555   560

Trp Val Glu Lys Leu Ser Asp Gly Ile Val Val Lys Glu Leu Lys Cys
                565   570   575

Glu Thr Pro Val Gln Phe Ala Asn Ile Glu Leu Lys Ser Leu Lys Asn
            580   585   590

Glu Ile Leu Cys Pro Lys Leu Leu Asn Lys Pro Ser Ala Pro Phe Thr
        595   600   605

Ser Pro Ala Pro Ala Ile Thr Phe Thr Thr Pro Leu Gly Pro Ile Arg
    610   615   620

Ser Pro Pro Gly Gly Pro Val Pro Leu Ser Ile Leu Ile Leu Ser Ile
625   630   635   640

Leu Val Val Leu Ile Leu Thr Val Phe Val Ala Phe Cys Leu Leu Val
                645   650   655

Phe Val Leu Arg Arg Asn Lys Lys Pro Thr Val Lys His Glu Gly Leu
            660   665   670

Gly Asn Pro Asp Cys Gly Ser Met Gln Leu Gln Leu Arg Lys His Asp
        675   680   685

His Lys Thr Asn Lys Lys Asp Gly Leu Ser Thr Glu Ala Phe Ile Pro
    690   695   700

Gln Thr Ile Glu Gln Met Ser Lys Ser His Thr Cys Gly Leu Lys Glu
705   710   715   720

```
Ser Glu Thr Gly Phe Met Phe Ser Asp Pro Pro Gly Gln Lys Val Val
            725             730             735

Met Arg Asn Val Ala Asp Lys Glu Lys Asp Leu Leu His Val Asp Thr
            740             745             750

Arg Lys Arg Leu Ser Thr Ile Asp Glu Leu Asp Glu Leu Phe Pro Ser
            755             760             765

Arg Asp Ser Asn Val Phe Ile Gln Asn Phe Leu Glu Ser Lys Lys Glu
        770             775             780

Tyr Asn Ser Ile Gly Val Ser Gly Phe Glu Ile Arg Tyr Pro Glu Lys
785             790             795             800

Gln Pro Asp Lys Lys Ser Lys Lys Ser Leu Ile Gly Gly Asn His Ser
            805             810             815

Lys Ile Val Val Glu Gln Arg Lys Ser Glu Tyr Phe Glu Leu Lys Ala
            820             825             830

Lys Leu Gln Ser Ser Pro Asp Tyr Leu Gln Val Leu Glu Glu Gln Thr
        835             840             845

Ala Leu Asn Lys Ile
    850


<210> 31
<211> 314
<212> PRT
<213> Homo sapiens

<400> 31
Leu Gln Gln Trp Ile Gln Lys Leu Ser Lys Asn Thr Val Thr Asp Asp
  1               5              10              15

Ile Leu Cys Thr Ser Pro Gly His Leu Asp Lys Lys Glu Leu Lys Ala
            20              25              30

Leu Asn Ser Glu Ile Leu Cys Pro Gly Leu Val Asn Asn Pro Ser Met
        35              40              45

Pro Thr Gln Thr Ser Tyr Leu Met Val Thr Thr Pro Ala Thr Thr Thr
    50              55              60

Asn Thr Ala Asp Thr Ile Leu Arg Ser Leu Thr Asp Ala Val Pro Leu
65              70              75              80

Ser Val Leu Ile Leu Gly Leu Leu Ile Met Phe Ile Thr Ile Val Phe
            85              90              95

Cys Ala Ala Gly Ile Val Val Leu Val Leu His Arg Arg Arg Arg Tyr
            100             105             110

Lys Lys Lys Gln Val Asp Glu Gln Met Arg Asp Asn Ser Pro Val His
        115             120             125
```

Leu Gln Tyr Ser Met Tyr Gly His Lys Thr Thr His His Thr Thr Glu
    130   135   140

Arg Pro Ser Ala Ser Leu Tyr Glu Gln His Met Val Ser Pro Met Val
145   150   155   160

His Val Tyr Arg Ser Pro Ser Phe Gly Pro Lys His Leu Glu Glu Glu
                165   170   175

Glu Glu Arg Asn Glu Lys Glu Gly Ser Asp Ala Lys His Leu Gln Arg
            180   185   190

Ser Leu Leu Glu Gln Glu Asn His Ser Pro Leu Thr Gly Ser Asn Met
        195   200   205

Lys Tyr Lys Thr Thr Asn Gln Ser Thr Glu Phe Leu Ser Phe Gln Asp
    210   215   220

Ala Ser Ser Leu Tyr Arg Asn Ile Leu Glu Lys Glu Arg Glu Leu Gln
225   230   235   240

Gln Leu Gly Ile Thr Glu Tyr Leu Arg Lys Asn Ile Ala Gln Leu Gln
            245   250   255

Pro Asp Met Glu Ala His Tyr Pro Gly Ala His Glu Glu Leu Lys Leu
            260   265   270

Met Glu Thr Leu Met Tyr Ser Arg Pro Arg Lys Val Leu Val Glu Gln
        275   280   285

Thr Lys Asn Glu Tyr Phe Glu Leu Lys Ala Asn Leu His Ala Glu Pro
    290   295   300

Asp Tyr Leu Glu Val Leu Glu Gln Gln Thr
305   310

<210> 32
<211> 966
<212> PRT
<213> Homo sapiens

<400> 32
Arg Arg Gly Ala Gln Gly Gly Lys Met His Thr Cys Cys Pro Pro Val
  1   5   10   15

Thr Leu Glu Gln Asp Leu His Arg Lys Met His Ser Trp Met Leu Gln
            20   25   30

Thr Leu Ala Phe Ala Val Thr Ser Leu Val Leu Ser Cys Ala Glu Thr
        35   40   45

Ile Asp Tyr Tyr Gly Glu Ile Cys Asp Asn Ala Cys Pro Cys Glu Glu
    50   55   60

Lys Asp Gly Ile Leu Thr Val Ser Cys Glu Asn Arg Gly Ile Ile Ser

87

Leu Ser Glu Ile Ser Pro Pro Arg Phe Pro Ile Tyr His Leu Leu Leu
            85   90   95

Ser Gly Asn Leu Leu Asn Arg Leu Tyr Pro Asn Glu Phe Val Asn Tyr
            100   105   110

Thr Gly Ala Ser Ile Leu His Leu Gly Ser Asn Val Ile Gln Asp Ile
            115   120   125

Glu Thr Gly Ala Phe His Gly Leu Arg Gly Leu Arg Arg Leu His Leu
    130   135   140

Asn Asn Asn Lys Leu Glu Leu Leu Arg Asp Asp Thr Phe Leu Gly Leu
145   150   155   160

Glu Asn Leu Glu Tyr Leu Gln Val Asp Tyr Asn Tyr Ile Ser Val Ile
                165   170   175

Glu Pro Asn Ala Phe Gly Lys Leu His Leu Leu Gln Val Leu Ile Leu
            180   185   190

Asn Asp Asn Leu Leu Ser Ser Leu Pro Asn Asn Leu Phe Arg Phe Val
            195   200   205

Pro Leu Thr His Leu Asp Leu Arg Gly Asn Arg Leu Lys Leu Leu Pro
    210   215   220

Tyr Val Gly Leu Leu Gln His Met Asp Lys Val Val Glu Leu Gln Leu
225   230   235   240

Glu Glu Asn Pro Trp Asn Cys Ser Cys Glu Leu Ile Ser Leu Lys Asp
            245   250   255

Trp Leu Asp Ser Ile Ser Tyr Ser Ala Leu Val Gly Asp Val Val Cys
            260   265   270

Glu Thr Pro Phe Arg Leu His Gly Arg Asp Leu Asp Glu Val Ser Lys
    275   280   285

Gln Glu Leu Cys Pro Arg Arg Leu Ile Ser Asp Tyr Glu Met Arg Pro
    290   295   300

Gln Thr Pro Leu Ser Thr Thr Gly Tyr Leu His Thr Thr Pro Ala Ser
305   310   315   320

Val Asn Ser Val Ala Thr Ser Ser Ser Ala Val Tyr Lys Pro Pro Leu
            325   330   335

Lys Pro Pro Lys Gly Thr Arg Gln Pro Asn Lys Pro Arg Val Arg Pro
            340   345   350

Thr Ser Arg Gln Pro Ser Lys Asp Leu Gly Tyr Ser Asn Tyr Gly Pro
    355   360   365

Ser Ile Ala Tyr Gln Thr Lys Ser Pro Val Pro Leu Glu Cys Pro Thr

```
Ala Cys Ser Cys Asn Leu Gln Ile Ser Asp Leu Gly Leu Asn Val Asn
385                 390             395                 400

Cys Gln Glu Arg Lys Ile Glu Ser Ile Ala Glu Leu Gln Pro Lys Pro
                405             410             415

Tyr Asn Pro Lys Lys Met Tyr Leu Thr Glu Asn Tyr Ile Ala Val Val
            420             425             430

Arg Arg Thr Asp Phe Leu Glu Ala Thr Gly Leu Asp Leu Leu His Leu
        435             440             445

Gly Asn Asn Arg Ile Ser Met Ile Gln Asp Arg Ala Phe Gly Asp Leu
    450             455             460

Thr Asn Leu Arg Arg Leu Tyr Leu Asn Gly Asn Arg Ile Glu Arg Leu
465             470             475             480

Ser Pro Glu Leu Phe Tyr Gly Leu Gln Ser Leu Gln Tyr Leu Phe Leu
            485             490             495

Gln Tyr Asn Leu Ile Arg Glu Ile Gln Ser Gly Thr Phe Asp Pro Val
        500             505             510

Pro Asn Leu Gln Leu Leu Phe Leu Asn Asn Asn Leu Leu Gln Ala Met
        515             520             525

Pro Ser Gly Val Phe Ser Gly Leu Thr Leu Leu Arg Leu Asn Leu Arg
    530             535             540

Ser Asn His Phe Thr Ser Leu Pro Val Ser Gly Val Leu Asp Gln Leu
545             550             555             560

Lys Ser Leu Ile Gln Ile Asp Leu His Asp Asn Pro Trp Asp Cys Thr
            565             570             575

Cys Asp Ile Val Gly Met Lys Leu Trp Val Glu Gln Leu Lys Val Gly
        580             585             590

Val Leu Val Asp Glu Val Ile Cys Lys Ala Pro Lys Lys Phe Ala Glu
    595             600             605

Thr Asp Met Arg Ser Ile Lys Ser Glu Leu Leu Cys Pro Asp Tyr Ser
    610             615             620

Asp Val Val Val Ser Thr Pro Thr Pro Ser Ser Ile Gln Val Pro Ala
625             630             635             640

Arg Thr Ser Ala Val Thr Pro Ala Val Arg Leu Asn Ser Thr Gly Ala
        645             650             655

Pro Ala Ser Leu Gly Ala Gly Gly Gly Ala Ser Ser Val Pro Leu Ser
        660             665             670

Val Leu Ile Leu Ser Leu Leu Leu Val Phe Ile Met Ser Val Phe Val
```

```
            675                     680                     685

Ala Ala Gly Leu Phe Val Leu Val Met Lys Arg Arg Lys Lys Asn Gln
    690                 695                 700

Ser Asp His Thr Ser Thr Asn Asn Ser Asp Val Ser Ser Phe Asn Met
705                 710                 715                 720

Gln Tyr Ser Val Tyr Gly Gly Gly Gly Thr Gly Gly His Pro His
                725                 730                 735

Ala His Val His His Arg Gly Pro Ala Leu Pro Lys Val Lys Thr Pro
            740                 745                 750

Ala Gly His Val Tyr Glu Tyr Ile Pro His Pro Leu Gly His Met Cys
            755                 760                 765

Lys Asn Pro Ile Tyr Arg Ser Arg Glu Gly Asn Ser Val Glu Asp Tyr
    770                 775                 780

Lys Asp Leu His Glu Leu Lys Val Thr Tyr Ser Ser Asn His His Leu
785                 790                 795                 800

Gln Gln Gln Gln Gln Pro Pro Pro Pro Gln Gln Pro Gln Gln Gln
                805                 810                 815

Pro Pro Pro Gln Leu Gln Leu Gln Pro Gly Glu Glu Glu Arg Arg Glu
            820                 825                 830

Ser His His Leu Arg Ser Pro Ala Tyr Ser Val Ser Thr Ile Glu Pro
            835                 840                 845

Arg Glu Asp Leu Leu Ser Pro Val Gln Asp Ala Asp Arg Phe Tyr Arg
    850                 855                 860

Gly Ile Leu Glu Pro Asp Lys His Cys Ser Thr Thr Pro Ala Gly Asn
865                 870                 875                 880

Ser Leu Pro Glu Tyr Pro Lys Phe Pro Cys Ser Pro Ala Ala Tyr Thr
                885                 890                 895

Phe Ser Pro Asn Tyr Asp Leu Arg Arg Pro His Gln Tyr Leu His Pro
            900                 905                 910

Gly Ala Gly Asp Ser Arg Leu Arg Glu Pro Val Leu Tyr Ser Pro Pro
            915                 920                 925

Ser Ala Val Phe Val Glu Pro Asn Arg Asn Glu Tyr Leu Glu Leu Lys
    930                 935                 940

Ala Lys Leu Asn Val Glu Pro Asp Tyr Leu Glu Val Leu Glu Lys Gln
945                 950                 955                 960

Thr Thr Phe Ser Gln Phe
            965
```

90

<210> 33
<211> 1428
<212> PRT
<213> Mus musculus

<400> 33
Met Val Ala Val Ala Val Ala Ala Ser Thr Glu Ala Arg Leu Arg Gly
 1   5   10   15

Ser Thr Thr Ala Thr Ala Ala Pro Ala Gly Arg Lys Gly Arg Gln His
            20   25   30

Arg Pro Cys Thr Ala Thr Gly Ala Trp Arg Pro Gly Pro Arg Ala Arg
            35   40   45

Leu Cys Leu Pro Arg Val Leu Ser Arg Ala Leu Pro Pro Pro Leu
    50   55   60

Leu Pro Leu Leu Phe Ser Leu Leu Leu Leu Pro Leu Pro Arg Glu Ala
65   70   75   80

Glu Ala Ala Ala Val Ala Ala Ala Val Ser Gly Ser Ala Ala Ala Glu
                85   90   95

Ala Lys Glu Cys Asp Arg Pro Cys Val Asn Gly Gly Arg Cys Asn Pro
            100   105   110

Gly Thr Gly Gln Cys Val Cys Pro Thr Gly Trp Val Gly Glu Gln Cys
            115   120   125

Gln His Cys Gly Gly Arg Phe Arg Leu Thr Gly Ser Ser Gly Phe Val
    130   135   140

Thr Asp Gly Pro Gly Asn Tyr Lys Tyr Lys Thr Lys Cys Thr Trp Leu
145   150   155   160

Ile Glu Gly Tyr Pro Asn Ala Val Leu Arg Leu Arg Phe Asn His Phe
                165   170   175

Ala Thr Glu Cys Ser Trp Asp His Leu Tyr Val Tyr Asp Gly Asp Ser
            180   185   190

Ile Tyr Ala Pro Leu Ile Ala Ala Phe Ser Gly Leu Ile Val Pro Glu
            195   200   205

Arg Asp Gly Asn Glu Thr Ala Pro Glu Val Thr Val Thr Ser Gly Tyr
    210   215   220

Ala Leu Leu His Phe Phe Ser Asp Ala Ala Tyr Asn Leu Thr Gly Phe
225   230   235   240

Asn Ile Thr Tyr Asn Phe Asp Met Cys Pro Asn Asn Cys Ser Ala Arg
                245   250   255

Gly Glu Cys Lys Ser Ser Asn Ser Ser Ser Ala Val Glu Cys Glu Cys
            260   265   270

```
Ser Glu Asn Trp Lys Gly Glu Ser Cys Asp Ile Pro His Cys Thr Asp
        275                 280             285

Asn Cys Gly Phe Pro His Arg Gly Ile Cys Asn Ala Ser Asp Thr Arg
        290                 295             300

Gly Cys Ser Cys Phe Pro His Trp Gln Gly Pro Gly Cys Ser Ile Pro
305                 310             315                     320

Val Pro Ala Asn Gln Ser Phe Trp Thr Arg Glu Glu Tyr Ser Asp Leu
                325             330             335

Lys Leu Pro Arg Ala Ser His Lys Ala Val Val Asn Gly Asn Ile Met
            340             345·            350

Trp Val Val Gly Gly Tyr Met Phe Asn His Ser Asp Tyr Ser Met Val
        355             360             365

Leu Ala Tyr Asp Leu Thr Ser Arg Glu Trp Leu Pro Leu Asn His Ser
    370             375             380

Val Asn Ser Val Val Val Arg Tyr Gly His Ser Leu Ala Leu His Lys
385             390             395                     400

Asp Lys Ile Tyr Met Tyr Gly Gly Lys Ile Asp Ser Thr Gly Asn Val
            405             410             415

Thr Asn Glu Leu Arg Val Phe His Ile His Asn Glu Ser Trp Val Leu
        420             425             430

Leu Thr Pro Lys Ala Lys Asp Gln Tyr Ala Val Val Gly His Ser Ala
        435             440             445

His Ile Val Thr Leu Ala Ser Gly Arg Val Val Met Leu Val Ile Phe
    450             455             460

Gly His Cys Pro Leu Tyr Gly Tyr Ile Ser Val Val Gln Glu Tyr Asp
465             470             475                     480

Leu Glu Lys Asn Thr Trp Ser Ile Leu His Thr Gln Gly Ala Leu Val
            485             490             495

Gln Gly Gly Tyr Gly His Ser Ser Ala Tyr Asp Asp Arg Thr Lys Ala
        500             505             510

Leu Tyr Val His Gly Gly Tyr Lys Ala Phe Ser Ala Asn Lys Tyr Arg
        515             520             525

Leu Ala Asp Asp Leu Tyr Arg Tyr Asp Val Asp Thr Gln Met Trp Thr
    530             535             540

Ile Leu Lys Asp Ser Arg Phe Phe Arg Tyr Leu His Thr Ala Val Ile
545             550             555                     560

Val Ser Gly Thr Met Leu Val Phe Gly Gly Asn Thr His Asn Asp Thr
            565             570             575
```

92

```
Ser Met Ser His Gly Ala Lys Cys Phe Ser Ser Asp Phe Met Ala Tyr
        580             585             590

Asp Ile Ala Cys Asp Arg Trp Ser Val Leu Pro Arg Pro Glu Leu His
        595             600             605

His Asp Val Asn Arg Phe Gly His Ser Ala Val Leu Tyr Asn Ser Thr
        610             615             620

Met Tyr Val Phe Gly Gly Phe Asn Ser Leu Leu Leu Ser Asp Val Leu
625             630             635             640

Val Phe Thr Ser Glu Gln Cys Asp Ala His Arg Ser Glu Ala Ala Cys
        645             650             655

Val Ala Ala Gly Pro Gly Ile Arg Cys Leu Trp Asp Thr Gln Ser Ser
        660             665             670

Arg Cys Thr Ser Trp Glu Leu Ala Thr Glu Glu Gln Ala Glu Lys Leu
        675             680             685

Lys Ser Glu Cys Phe Ser Lys Arg Thr Leu Asp His Asp Arg Cys Asp
        690             695             700

Gln His Thr Asp Cys Tyr Ser Cys Thr Ala Asn Thr Asn Asp Cys His
705             710             715             720

Trp Cys Asn Asp His Cys Val Pro Val Asn His Ser Cys Thr Glu Gly
        725             730             735

Gln Ile Ser Ile Ala Lys Tyr Glu Ser Cys Pro Lys Asp Asn Pro Met
        740             745             750

Tyr Tyr Cys Asn Lys Lys Thr Ser Cys Arg Ser Cys Ala Leu Asp Gln
        755             760             765

Asn Cys Gln Trp Glu Pro Arg Asn Gln Glu Cys Ile Ala Leu Pro Glu
770             775             780

Asn Ile Cys Gly Asn Gly Trp His Leu Val Gly Asn Ser Cys Leu Lys
785             790             795             800

Ile Thr Thr Ala Lys Glu Asn Tyr Asp Asn Ala Lys Leu Ser Cys Arg
        805             810             815

Asn His Asn Ala Phe Leu Ala Ser Leu Thr Ser Gln Lys Lys Val Glu
        820             825             830

Leu Val Leu Lys Gln Leu Arg Leu Met Gln Ser Ser Gln Ser Met Ser
        835             840             845

Lys Leu Thr Leu Thr Pro Trp Val Gly Leu Arg Lys Ile Asn Val Ser
        850             855             860

Tyr Trp Cys Trp Glu Asp Met Ser Pro Phe Thr Asn Ser Leu Leu Gln
865             870             875             880
```

93

```
Trp Met Pro Ser Glu Pro Ser Asp Ala Gly Phe Cys Gly Ile Leu Ser
            885                 890                 895

Glu Pro Ser Thr Arg Gly Leu Lys Ala Ala Thr Cys Ile Asn Pro Leu
            900                 905                 910

Asn Gly Ser Val Cys Glu Arg Pro Ala Asn His Ser Ala Lys Gln Cys
            915                 920                 925

Arg Thr Pro Cys Ala Leu Arg Thr Ala Cys Gly Glu Cys Thr Ser Ser
    930                 935                 940

Ser Ser Glu Cys Met Trp Cys Ser Asn Met Lys Gln Cys Val Asp Ser
945                 950                 955                 960

Asn Ala Tyr Val Ala Ser Phe Pro Phe Gly Gln Cys Met Glu Trp Tyr
            965                 970                 975

Thr Met Ser Ser Cys Pro Pro Glu Asn Cys Ser Gly Tyr Cys Thr Cys
            980                 985                 990

Ser His Cys Leu Glu Gln Pro Gly Cys Gly Trp Cys Thr Asp Pro Ser
    995                 1000                1005

Asn Thr Gly Lys Gly Lys Cys Ile Glu Gly Ser Tyr Lys Gly Pro Val
    1010                1015                1020

Lys Met Pro Ser Gln Ala Ser Ala Gly Asn Val Tyr Pro Gln Pro Leu
1025                1030                1035                1040

Leu Asn Ser Ser Met Cys Leu Glu Asp Ser Arg Tyr Asn Trp Ser Phe
            1045                1050                1055

Ile His Cys Pro Ala Cys Gln Cys Asn Gly His Ser Lys Cys Ile Asn
            1060                1065                1070

Gln Ser Val Cys Glu Lys Cys Glu Asp Leu Thr Thr Gly Lys His Cys
    1075                1080                1085

Glu Thr Cys Ile Ser Gly Phe Tyr Gly Asp Pro Thr Asn Gly Gly Lys
    1090                1095                1100

Cys Gln Pro Cys Lys Cys Asn Gly His Ala Ser Leu Cys Asn Thr Asn
1105                1110                1115                1120

Thr Gly Lys Cys Phe Cys Thr Thr Lys Gly Val Lys Gly Asp Glu Cys
            1125                1130                1135

Gln Leu Cys Lys Val Glu Asn Arg Tyr Gln Gly Asn Pro Leu Lys Gly
            1140                1145                1150

Thr Cys Tyr Tyr Thr Leu Leu Ile Asp Tyr Gln Phe Thr Phe Ser Leu
    1155                1160                1165

Ser Gln Gly Asp Asp Arg Tyr Tyr Thr Ala Ile Asn Phe Val Ala Thr
    1170                1175                1180
```

```
Pro Asp Glu Gln Asn Arg Asp Phe Asp Met Phe Ile Asn Ala Ser Lys
1185              1190              1195              1200

Lys Phe Asn Leu Asn Ile Thr Trp Ala Thr Ser Phe Pro Ala Gly Thr
              1205              1210              1215

Gln Thr Gly Glu Glu Val Pro Val Val Ser Lys Thr Asn Ile Lys Glu
         1220              1225              1230

Tyr Lys Asp Ser Phe Ser Asn Glu Lys Phe Asp Phe Arg Asn His Pro
         1235              1240              1245

Asn Ile Thr Phe Phe Val Tyr Val Ser Asn Phe Thr Trp Pro Ile Lys
    1250              1255              1260

Ile Gln Ile Ala Phe Ser Gln His Ser Asn Phe Met Asp Leu Val Gln
1265              1270              1275              1280

Phe Phe Val Thr Phe Phe Ser Cys Phe Leu Ser Leu Leu Leu Val Ala
              1285              1290              1295

Ala Val Val Trp Lys Ile Lys Gln Ser Cys Trp Ala Ser Arg Arg Arg
         1300              1305              1310

Glu Gln Leu Leu Arg Glu Met Gln Gln Met Ala Ser Arg Pro Phe Ala
         1315              1320              1325

Ser Val Asn Val Ala Leu Glu Thr Asp Glu Glu Pro Pro Asp Leu Ile
    1330              1335              1340

Gly Gly Ser Ile Lys Thr Val Pro Lys Pro Ile Ala Leu Glu Pro Cys
1345              1350              1355              1360

Phe Gly Asn Lys Ala Ala Val Leu Ser Val Phe Val Arg Leu Pro Arg
              1365              1370              1375

Gly Leu Gly Gly Ile Pro Pro Pro Gly Gln Ser Gly Leu Ala Val Ala
         1380              1385              1390

Ser Ala Leu Val Asp Ile Ser Gln Gln Met Pro Ile Val Tyr Lys Glu
    1395              1400              1405

Lys Ser Gly Ala Val Arg Asn Arg Lys Gln Gln Pro Pro Ala Gln Pro
    1410              1415              1420

Gly Thr Cys Ile
1425


<210> 34
<211> 1428
<212> PRT
<213> Mus musculus

<400> 34
Met Val Ala Val Ala Ala Ala Ala Ala Thr Glu Ala Arg Leu Arg Gly
 1               5                10               15
```

95

```
Ser Thr Thr Thr Thr Ala Ala Pro Ala Gly Arg Lys Gly Arg Gln His
            20              25                  30

Arg Pro Cys Thr Ala Thr Gly Ala Trp Arg Pro Gly Pro Arg Ala Arg
        35              40                  45

Leu Cys Leu Pro Arg Val Leu Ser Arg Ala Leu Pro Pro Pro Leu
    50              55              60

Leu Pro Leu Leu Phe Ser Leu Leu Leu Leu Pro Leu Pro Arg Glu Ala
65              70                  75                  80

Glu Ala Ala Ala Val Ala Ala Ala Val Ser Gly Ser Ala Ala Ala Glu
            85              90                  95

Ala Lys Glu Cys Asp Arg Pro Cys Val Asn Gly Gly Arg Cys Asn Pro
        100             105                 110

Gly Thr Gly Gln Cys Val Cys Pro Thr Gly Trp Val Gly Glu Gln Cys
        115             120                 125

Gln His Cys Gly Gly Arg Phe Arg Leu Thr Gly Ser Ser Gly Phe Val
    130             135                 140

Thr Asp Gly Pro Gly Asn Tyr Lys Tyr Lys Thr Lys Cys Thr Trp Leu
145             150             155                 160

Ile Glu Gly Gln Pro Asn Arg Ile Met Arg Leu Arg Phe Asn His Phe
            165             170                 175

Ala Thr Glu Cys Ser Trp Asp His Leu Tyr Val Tyr Asp Gly Asp Ser
        180             185                 190

Ile Tyr Ala Pro Leu Ile Ala Ala Phe Ser Gly Leu Ile Val Pro Glu
    195             200             205

Arg Asp Gly Asn Glu Thr Ala Pro Glu Val Thr Val Thr Ser Gly Tyr
    210             215             220

Ala Leu Leu His Phe Phe Ser Asp Ala Ala Tyr Asn Leu Thr Gly Phe
225             230             235                 240

Asn Ile Thr Tyr Asn Phe Asp Met Cys Pro Asn Asn Cys Ser Gly Arg
            245             250             255

Gly Glu Cys Lys Ser Ser Asn Ser Ser Ala Val Glu Cys Glu Cys
        260             265             270

Ser Glu Asn Trp Lys Gly Glu Ser Cys Asp Ile Pro His Cys Thr Asp
        275             280             285

Asn Cys Gly Phe Pro His Arg Gly Ile Cys Asn Ala Ser Asp Thr Arg
    290             295             300

Gly Cys Ser Cys Phe Pro His Trp Gln Gly Pro Gly Cys Ser Ile Pro
305             310             315                 320
```

96

```
Val Pro Ala Asn Gln Ser Phe Trp Thr Arg Glu Glu Tyr Ser Asp Leu
            325             330             335

Lys Leu Pro Arg Ala Ser His Lys Ala Val Val Asn Gly Asn Ile Met
            340             345             350

Trp Val Val Gly Gly Tyr Met Phe Asn His Ser Asp Tyr Ser Met Val
            355             360             365

Leu Ala Tyr Asp Leu Thr Ser Arg Glu Trp Leu Pro Leu Asn His Ser
    370             375             380

Val Asn Ser Val Val Val Arg Tyr Gly His Ser Leu Ala Leu His Lys
385             390             395             400

Asp Lys Ile Tyr Met Tyr Gly Gly Lys Ile Asp Ser Thr Gly Asn Val
            405             410             415

Thr Asn Glu Leu Arg Val Phe His Ile His Asn Glu Ser Trp Val Leu
            420             425             430

Leu Thr Pro Lys Ala Lys Asp Gln Tyr Ala Val Val Gly His Ser Ala
            435             440             445

His Ile Val Thr Leu Ala Ser Gly Arg Val Val Met Leu Val Ile Phe
    450             455             460

Gly His Cys Pro Leu Tyr Gly Tyr Ile Ser Val Val Gln Glu Tyr Asp
465             470             475             480

Leu Glu Lys Asn Thr Trp Ser Ile Leu His Thr Gln Gly Ala Leu Val
            485             490             495

Gln Gly Gly Tyr Gly His Ser Ser Val Tyr Asp Asp Arg Thr Lys Ala
            500             505             510

Leu Tyr Val His Gly Gly Tyr Lys Ala Phe Ser Ala Asn Lys Tyr Arg
            515             520             525

Leu Ala Asp Asp Leu Tyr Arg Tyr Asp Val Asp Thr Gln Met Trp Thr
    530             535             540

Ile Leu Lys Asp Ser Arg Phe Phe Arg Tyr Leu His Thr Ala Val Ile
545             550             555             560

Val Ser Gly Thr Met Leu Val Phe Gly Gly Asn Thr His Asn Asp Thr
            565             570             575

Ser Met Ser His Gly Ala Lys Cys Phe Ser Ser Asp Phe Met Ala Tyr
            580             585             590

Asp Ile Ala Cys Asp Arg Trp Ser Val Leu Pro Arg Pro Glu Leu His
    595             600             605

His Asp Val Asn Arg Phe Gly His Ser Ala Val Leu Tyr Asn Ser Thr
    610             615             620
```

```
Met Tyr Val Phe Gly Gly Phe Asn Ser Leu Leu Leu Ser Asp Val Leu
625             630             635             640

Val Phe Thr Ser Glu Gln Cys Asp Ala His Arg Ser Glu Ala Ala Cys
            645             650             655

Val Ala Ala Gly Pro Gly Ile Arg Cys Leu Trp Asp Thr Gln Ser Ser
        660             665             670

Arg Cys Thr Ser Trp Glu Leu Ala Thr Glu Glu Gln Ala Glu Lys Leu
        675             680             685

Lys Ser Glu Cys Phe Ser Lys Arg Thr Leu Asp His Asp Arg Cys Asp
    690             695             700

Gln His Thr Asp Cys Tyr Ser Cys Thr Ala Asn Thr Asn Asp Cys His
705             710             715             720

Trp Cys Asn Asp His Cys Val Pro Val Asn His Ser Cys Thr Glu Gly
            725             730             735

Gln Ile Ser Ile Ala Lys Tyr Glu Ser Cys Pro Lys Asp Asn Pro Met
            740             745             750

Tyr Tyr Cys Asn Lys Lys Thr Ser Cys Arg Ser Cys Ala Leu Asp Gln
        755             760             765

Asn Cys Gln Trp Glu Pro Arg Asn Gln Glu Cys Ile Ala Leu Pro Glu
    770             775             780

Asn Ile Cys Gly Asn Gly Trp His Leu Val Gly Asn Ser Cys Leu Lys
785             790             795             800

Ile Thr Thr Ala Lys Glu Asn Tyr Asp Asn Ala Lys Leu Ser Cys Arg
            805             810             815

Asn His Asn Ala Phe Leu Ala Ser Leu Thr Ser Gln Lys Lys Val Glu
            820             825             830

Phe Val Leu Lys Gln Leu Arg Leu Met Gln Ser Ser Gln Ser Met Ser
        835             840             845

Lys Leu Thr Leu Thr Pro Trp Val Gly Leu Arg Lys Ile Asn Val Ser
    850             855             860

Tyr Trp Cys Trp Glu Asp Met Ser Pro Phe Thr Asn Ser Leu Leu Gln
865             870             875             880

Trp Met Pro Ser Glu Pro Ser Asp Ala Gly Phe Cys Gly Ile Leu Ser
            885             890             895

Glu Pro Ser Thr Arg Gly Leu Lys Ala Ala Thr Cys Ile Asn Pro Leu
            900             905             910

Asn Gly Ser Val Cys Glu Arg Pro Ala Asn His Ser Ala Lys Gln Cys
        915             920             925
```

98

```
Arg Thr Pro Cys Ala Leu Arg Thr Ala Cys Gly Glu Cys Thr Ser Ser
    930                 935                 940

Ser Ser Glu Cys Met Trp Cys Ser Asn Met Lys Gln Cys Val Asp Ser
945                 950                 955                 960

Asn Ala Tyr Val Ala Ser Phe Pro Phe Gly Gln Cys Met Glu Trp Tyr
            965                 970                 975

Thr Met Ser Ser Cys Pro Pro Glu Asn Cys Ser Gly Tyr Cys Thr Cys
            980                 985                 990

Ser His Cys Leu Glu Gln Pro Gly Cys Gly Trp Cys Thr Asp Pro Ser
            995                 1000                1005

Asn Thr Gly Lys Gly Lys Cys Ile Glu Gly Ser Tyr Lys Gly Pro Val
    1010                1015                1020

Lys Met Pro Ser Gln Ala Ser Ala Gly Asn Val Tyr Pro Gln Pro Leu
1025                1030                1035                1040

Leu Asn Ser Ser Met Cys Leu Glu Asp Ser Arg Tyr Asn Trp Ser Phe
            1045                1050                1055

Ile His Cys Pro Ala Cys Gln Cys Asn Gly His Ser Lys Cys Ile Asn
            1060                1065                1070

Gln Ser Ile Cys Glu Lys Cys Glu Asp Leu Thr Thr Gly Lys His Cys
    1075                1080                1085

Glu Thr Cys Ile Ser Gly Phe Tyr Gly Asp Pro Thr Asn Gly Gly Lys
    1090                1095                1100

Cys Gln Pro Cys Lys Cys Asn Gly His Ala Ser Leu Cys Asn Thr Asn
1105                1110                1115                1120

Thr Gly Lys Cys Phe Cys Thr Thr Lys Gly Val Lys Gly Asp Glu Cys
            1125                1130                1135

Gln Leu Cys Glu Val Glu Asn Arg Tyr Gln Gly Asn Pro Leu Lys Gly
            1140                1145                1150

Thr Cys Tyr Tyr Thr Leu Leu Ile Asp Tyr Gln Phe Thr Phe Ser Leu
    1155                1160                1165

Ser Gln Glu Asp Asp Arg Tyr Tyr Thr Ala Ile Asn Phe Val Ala Thr
    1170                1175                1180

Pro Asp Glu Gln Asn Arg Asp Leu Asp Met Phe Ile Asn Ala Ser Lys
1185                1190                1195                1200

Asn Phe Asn Leu Asn Ile Thr Trp Ala Thr Ser Phe Pro Ala Gly Thr
            1205                1210                1215

Gln Thr Gly Glu Glu Val Pro Val Val Ser Lys Thr Asn Ile Lys Glu
            1220                1225                1230
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Tyr Lys Asp Ser Phe Ser Asn Glu Lys Phe Asp Phe Arg Asn His Pro
        1235                1240                1245

Asn Ile Thr Phe Phe Val Tyr Val Ser Asn Phe Thr Trp Pro Ile Lys
    1250                1255                1260

Ile Gln Ile Ala Phe Ser Gln His Ser Asn Phe Met Asp Leu Val Gln
1265                1270                1275                1280

Phe Phe Val Thr Phe Phe Ser Cys Phe Leu Ser Leu Leu Leu Val Ala
            1285                1290                1295

Ala Val Val Trp Lys Ile Lys Gln Ser Cys Trp Ala Ser Arg Arg Arg
        1300                1305                1310

Glu Gln Leu Leu Arg Glu Met Gln Gln Met Ala Ser Arg Pro Phe Ala
        1315                1320                1325

Ser Val Asn Val Ala Leu Glu Thr Asp Glu Glu Pro Pro Asp Leu Ile
    1330                1335                1340

Gly Gly Ser Ile Lys Thr Val Pro Lys Pro Ile Ala Leu Glu Pro Cys
1345                1350                1355                1360

Phe Gly Asn Lys Ala Ala Val Leu Ser Val Phe Val Arg Leu Pro Arg
            1365                1370                1375

Gly Leu Gly Gly Ile Pro Pro Pro Gly Gln Ser Gly Leu Ala Val Ala
            1380                1385                1390

Ser Ala Leu Val Asp Ile Ser Gln Gln Met Pro Ile Val Tyr Lys Glu
        1395                1400                1405

Lys Ser Gly Ala Val Arg Asn Arg Lys Gln Gln Pro Pro Ala Gln Pro
    1410                1415                1420

Gly Thr Cys Ile
1425


<210> 35
<211> 1198
<212> PRT
<213> Homo sapiens

<400> 35
Met Val Ala Ala Ala Ala Ala Thr Glu Ala Arg Leu Arg Arg Arg Thr
  1                 5                 10                15

Ala Ala Thr Ala Ala Leu Ala Gly Arg Ser Gly Gly Pro His Cys Val
            20                25                30

Asn Gly Gly Arg Cys Asn Pro Gly Thr Gly Gln Cys Val Cys Pro Ala
        35                40                45

Gly Trp Val Gly Glu Gln Cys Gln His Cys Gly Gly Arg Phe Arg Leu
```

Thr Gly Ser Ser Gly Phe Val Thr Asp Gly Pro Gly Asn Tyr Lys Tyr
65   70   75   80

Lys Thr Lys Cys Thr Trp Leu Ile Glu Gly Gln Pro Asn Arg Ile Met
                        85   90   95

Arg Leu Arg Phe Asn His Phe Ala Thr Glu Cys Ser Trp Asp His Leu
                    100   105   110

Tyr Val Tyr Asp Gly Asp Ser Ile Tyr Ala Pro Leu Val Ala Ala Phe
                115   120   125

Ser Gly Leu Ile Val Pro Glu Arg Asp Gly Asn Glu Thr Val Pro Glu
            130   135   140

Val Val Ala Thr Ser Gly Tyr Ala Leu Leu His Phe Phe Ser Asp Ala
145   150   155   160

Ala Tyr Asn Leu Thr Gly Phe Asn Ile Thr Tyr Ser Phe Asp Met Cys
                    165   170   175

Pro Asn Asn Cys Ser Gly Arg Gly Glu Cys Lys Ile Ser Asn Ser Ser
                180   185   190

Asp Thr Val Glu Cys Glu Cys Ser Glu Asn Trp Lys Gly Glu Ala Cys
                195   200   205

Asp Ile Pro His Cys Thr Asp Asn Cys Gly Phe Pro His Arg Gly Ile
        210   215   220

Cys Asn Ser Ser Asp Val Arg Gly Cys Ser Cys Phe Ser Asp Trp Gln
225   230   235   240

Gly Pro Gly Cys Ser Val Pro Val Pro Ala Asn Gln Ser Phe Trp Thr
                    245   250   255

Arg Glu Glu Tyr Ser Asn Leu Lys Leu Pro Arg Ala Ser His Lys Ala
                260   265   270

Val Val Asn Gly Asn Ile Met Trp Val Val Gly Gly Tyr Met Phe Asn
            275   280   285

His Ser Asp Tyr Asn Met Val Leu Ala Tyr Asp Leu Ala Ser Arg Glu
        290   295   300

Trp Leu Pro Leu Asn Arg Ser Val Asn Asn Val Val Val Arg Tyr Gly
305   310   315   320

His Ser Leu Ala Leu Tyr Lys Asp Lys Ile Tyr Met Tyr Gly Gly Lys
                325   330   335

Ile Asp Ser Thr Gly Asn Val Thr Asn Glu Leu Arg Val Phe His Ile
                340   345   350

His Asn Glu Ser Trp Val Leu Leu Thr Pro Lys Ala Lys Glu Gln Tyr

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            355                      360                      365

Ala Val Val Gly His Ser Ala His Ile Val Thr Leu Lys Asn Gly Arg
    370                      375                  380

Val Val Met Leu Val Ile Phe Gly His Cys Pro Leu Tyr Gly Tyr Ile
385                      390                  395                  400

Ser Asn Val Gln Glu Tyr Asp Leu Asp Lys Asn Thr Trp Ser Ile Leu
            405                      410                  415

His Thr Gln Gly Ala Leu Val Gln Gly Gly Tyr Gly His Ser Ser Val
            420                      425                  430

Tyr Asp His Arg Thr Arg Ala Leu Tyr Val His Gly Gly Tyr Lys Ala
            435                      440                  445

Phe Ser Ala Asn Lys Tyr Arg Leu Ala Asp Asp Leu Tyr Arg Tyr Asp
    450                      455                  460

Val Asp Thr Gln Met Trp Thr Ile Leu Lys Asp Ser Arg Phe Phe Arg
465                      470                  475                  480

Tyr Leu His Thr Ala Val Ile Val Ser Gly Thr Met Leu Val Phe Gly
            485                      490                  495

Gly Asn Thr His Asn Asp Thr Ser Met Ser His Gly Ala Lys Cys Phe
            500                      505                  510

Ser Ser Asp Phe Met Ala Tyr Asp Ile Ala Cys Asp Arg Trp Ser Val
            515                      520                  525

Leu Pro Arg Pro Asp Ser Thr Met Met Ser Thr Asp Leu Ala Ile Pro
    530                      535                  540

Ala Val Leu His Asn Ser Thr Met Tyr Val Phe Gly Gly Phe Asn Ser
545                      550                      555                  560

Leu Leu Leu Ser Asp Ile Leu Val Phe Thr Ser Glu Gln Cys Asp Ala
            565                      570                  575

His Arg Ser Glu Ala Ala Cys Leu Ala Ala Gly Pro Gly Ile Arg Cys
            580                      585                  590

Val Trp Asn Thr Gly Ser Ser Gln Cys Ile Ser Trp Ala Leu Ala Thr
    595                      600                  605

Asp Glu Gln Glu Glu Lys Leu Lys Ser Glu Cys Phe Ser Lys Arg Thr
    610                      615                  620

Leu Asp His Asp Arg Cys Asp Gln His Thr Asp Cys Tyr Ser Cys Thr
625                      630                      635                  640

Ala Asn Thr Asn Asp Cys His Trp Cys Asn Asp His Cys Val Pro Arg
            645                      650                  655

Asn His Ser Cys Ser Glu Gly Gln Ile Ser Ile Phe Arg Tyr Glu Asn
```

Cys Pro Lys Asp Asn Pro Met Tyr Tyr Cys Asn Lys Lys Thr Ser Cys
        675   680   685

Arg Ser Cys Ala Leu Asp Gln Asn Cys Gln Trp Glu Pro Arg Asn Gln
        690   695   700

Glu Cys Ile Ala Leu Pro Glu Asn Ile Cys Gly Ile Gly Trp His Leu
705   710   715   720

Val Gly Asn Ser Cys Leu Lys Ile Thr Thr Ala Lys Glu Asn Tyr Asp
                725   730   735

Asn Ala Lys Leu Phe Cys Arg Asn His Asn Ala Leu Leu Ala Ser Leu
            740   745   750

Thr Thr Gln Lys Lys Val Glu Phe Val Leu Lys Gln Leu Arg Ile Met
        755   760   765

Gln Ser Ser Gln Ser Met Ser Lys Leu Thr Leu Thr Pro Trp Val Gly
        770   775   780

Leu Arg Lys Ile Asn Val Ser Tyr Trp Cys Trp Glu Asp Met Ser Pro
785   790   795   800

Phe Thr Asn Ser Leu Leu Gln Trp Met Pro Ser Glu Pro Ser Asp Ala
                805   810   815

Gly Phe Cys Gly Ile Leu Ser Glu Pro Ser Thr Arg Gly Leu Lys Ala
            820   825   830

Ala Thr Cys Ile Asn Pro Leu Asn Gly Ser Val Cys Glu Arg Pro Ala
        835   840   845

Asn His Ser Ala Lys Gln Cys Arg Thr Pro Cys Ala Leu Arg Thr Ala
        850   855   860

Cys Gly Asp Cys Thr Ser Gly Ser Ser Glu Cys Met Trp Cys Ser Asn
865   870   875   880

Met Lys Gln Cys Val Asp Ser Asn Ala Tyr Val Ala Ser Phe Pro Phe
            885   890   895

Gly Gln Cys Met Glu Trp Tyr Thr Met Ser Thr Cys Pro Pro Glu Asn
            900   905   910

Cys Ser Gly Tyr Cys Thr Cys Ser His Cys Leu Glu Gln Pro Gly Cys
            915   920   925

Gly Trp Cys Thr Asp Pro Ser Asn Thr Gly Lys Gly Lys Cys Ile Glu
        930   935   940

Gly Ser Tyr Lys Gly Pro Val Lys Met Pro Ser Gln Ala Pro Thr Gly
945   950   955   960

Asn Phe Tyr Pro Gln Pro Leu Leu Asn Ser Ser Met Cys Leu Glu Asp

Ser Arg Tyr Asn Trp Ser Phe Ile His Cys Pro Ala Cys Gln Cys Asn
      980   985   990

Gly His Ser Lys Cys Ile Asn Gln Ser Ile Cys Glu Lys Cys Glu Asn
      995   1000   1005

Leu Thr Thr Gly Lys His Cys Glu Thr Cys Ile Ser Gly Phe Tyr Gly
   1010   1015   1020

Asp Pro Thr Asn Gly Gly Lys Cys Gln Pro Cys Lys Cys Asn Gly His
1025   1030   1035   1040

Ala Ser Leu Cys Asn Thr Asn Thr Gly Lys Cys Phe Cys Thr Thr Lys
         1045   1050   1055

Gly Val Lys Gly Asp Glu Cys Gln Leu Cys Glu Val Glu Asn Arg Tyr
      1060   1065   1070

Gln Gly Asn Pro Leu Arg Gly Thr Cys Tyr Tyr Thr Leu Leu Ile Asp
      1075   1080   1085

Tyr Gln Phe Thr Phe Ser Leu Ser Gln Glu Asp Asp Arg Tyr Tyr Thr
   1090   1095   1100

Ala Ile Asn Phe Val Ala Thr Pro Asp Glu Gln Asn Arg Asp Leu Asp
1105   1110   1115   1120

Met Phe Ile Asn Ala Ser Lys Asn Phe Asn Leu Asn Ile Thr Trp Ala
         1125   1130   1135

Ala Ser Phe Ser Ala Gly Thr Gln Ala Gly Glu Glu Met Pro Val Val
         1140   1145   1150

Ser Lys Thr Asn Ile Lys Glu Tyr Lys Asp Ser Phe Ser Asn Glu Lys
      1155   1160   1165

Phe Asp Phe Arg Asn His Pro Asn Ile Thr Phe Phe Val Tyr Val Ser
   1170   1175   1180

Asn Phe Thr Trp Pro Ile Lys Ile Gln Val Gln Thr Glu Gln
1185   1190   1195

<210> 36
<211> 1275
<212> PRT
<213> Rattus norvegicus

<400> 36
Met Val Ala Ala Ala Ala Ala Ala Glu Ala Thr Glu Ala Arg Leu Arg
   1   5   10   15

Gly Tyr Thr Thr Ala Thr Ala Ala Pro Ala Gly Trp Lys Glu Arg Gln
         20   25   30

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His Arg Pro Cys Ala Ala Thr Gly Ala Trp Arg Pro Trp Pro Arg Ala
        35                  40                  45

Gly Leu Cys Leu Pro Arg Val Leu Ser Arg Ala Leu Ser Pro Pro Pro
        50                  55                  60

Leu Leu Pro Leu Leu Pro Leu Leu Phe Ser Leu Leu Leu Pro Leu
65                  70                  75                  80

Pro Arg Glu Ala Glu Ala Ala Ala Val Ala Ala Ala Val Ser Gly Ser
                85                  90                  95

Ala Ala Ala Glu Ala Lys Glu Cys Asp Arg Pro Cys Val Asn Gly Gly
            100                 105                 110

Arg Cys Asn Pro Gly Thr Gly Gln Cys Val Cys Pro Thr Gly Trp Val
        115                 120                 125

Gly Glu Gln Cys Gln His Cys Gly Gly Arg Phe Arg Leu Thr Gly Ser
        130                 135                 140

Ser Gly Phe Val Thr Asp Gly Pro Gly Asn Tyr Lys Tyr Lys Thr Lys
145                 150                 155                 160

Cys Thr Trp Leu Ile Glu Gly Gln Pro Asn Lys Ile Met Arg Leu Arg
                165                 170                 175

Phe Asn His Phe Ala Thr Glu Cys Ser Trp Asp His Leu Tyr Val Tyr
            180                 185                 190

Asp Gly Asp Ser Ile Tyr Ala Pro Leu Ile Ala Ala Phe Ser Gly Leu
        195                 200                 205

Ile Val Pro Glu Arg Asp Gly Asn Glu Thr Ala Pro Glu Val Thr Val
210                 215                 220

Thr Ser Gly Tyr Ala Leu Leu His Phe Phe Ser Asp Ala Ala Tyr Asn
225                 230                 235                 240

Leu Thr Gly Phe Asn Ile Thr Tyr Asn Phe Asp Met Cys Pro Asn Asn
                245                 250                 255

Cys Ser Gly Arg Gly Glu Cys Lys Ser Ser Asn Ser Ser Ser Thr Val
        260                 265                 270

Glu Cys Glu Cys Ser Glu Asn Trp Lys Gly Glu Ser Cys Asp Ile Pro
        275                 280                 285

His Cys Thr Asp Asn Cys Gly Phe Pro His Arg Gly Ile Cys Asn Ala
        290                 295                 300

Ser Asp Thr Arg Gly Cys Ser Cys Phe Pro His Trp Gln Gly Pro Gly
305                 310                 315                 320

Cys Ser Ile Pro Val Pro Ala Asn Gln Ser Phe Trp Thr Arg Glu Glu
            325                 330                 335
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Tyr Ser Asp Leu Lys Leu Pro Arg Ala Ser His Lys Ala Glu Val Asn
        340                 345                 350

Gly Asn Ile Met Trp Val Val Gly Gly Tyr Met Phe Asn His Ser Asp
        355                 360                 365

Tyr Ser Met Val Leu Ala Tyr Asp Leu Ala Ser Arg Glu Trp Leu Ser
        370                 375                 380

Leu Asn His Ser Val Asn Ser Val Val Val Arg Tyr Gly His Ser Leu
385                 390                 395                 400

Ala Leu His Lys Asp Lys Ile Tyr Met Tyr Gly Gly Lys Ile Asp Ser
                405                 410                 415

Thr Gly Asn Val Thr Asn Glu Leu Arg Val Phe His Ile His Asn Glu
            420                 425                 430

Ser Trp Val Leu Leu Thr Pro Lys Ala Lys Asp Gln Tyr Ala Val Val
        435                 440                 445

Gly His Ser Ala His Ile Val Thr Leu Ser Ser Gly Arg Val Val Met
    450                 455                 460

Leu Val Ile Phe Gly His Cys Pro Leu Tyr Gly Tyr Ile Ser Val Val
465                 470                 475                 480

Gln Glu Tyr Asp Leu Glu Lys Asn Thr Trp Ser Ile Leu Gln Thr Gln
                485                 490                 495

Gly Ala Leu Val Gln Gly Gly Tyr Gly His Ser Ser Val Tyr Asp His
            500                 505 .               510

Arg Thr Lys Ala Leu Tyr Val His Gly Gly Tyr Lys Ala Phe Ser Ala
        515                 520                 525

Asn Lys Tyr Arg Leu Ala Asp Asp Leu Tyr Arg Tyr His Val Asp Thr
    530                 535                 540

Gln Met Trp Thr Ile Leu Lys Asp Ser Arg Phe Phe Arg Tyr Leu His
545                 550                 555                 560

Thr Ala Val Ile Val Ser Gly Thr Met Leu Val Phe Gly Gly Asn Thr
            565                 570                 575

His Asn Asp Thr Ser Met Ser His Gly Ala Lys Cys Phe Ser Ser Asp
            580                 585                 590

Phe Met Ala Tyr Asp Ile Ala Cys Asp Arg Trp Ser Val Leu Pro Arg
        595                 600                 605

Pro Glu Leu His His Asp Val Asn Arg Phe Gly His Ser Ala Val Leu
    610                 615                 620

His Asn Ser Thr Met Tyr Val Phe Gly Gly Phe Asn Ser Leu Leu Leu
625                 630                 635                 640
```

Ser Asp Val Leu Val Phe Thr Ser Glu Gln Cys Asp Ala His Arg Ser
        645   650   655

Glu Ala Ala Cys Val Ala Ala Gly Pro Gly Ile Arg Cys Leu Trp Asp
        660   665   670

Thr Gln Ser Ser Arg Cys Thr Ser Trp Glu Leu Ala Thr Glu Glu Gln
        675   680   685

Ala Glu Lys Leu Lys Ser Glu Cys Phe Ser Lys Arg Thr Leu Asp His
    690   695   700

Asp Arg Cys Asp Gln His Thr Asp Cys Tyr Ser Cys Thr Ala Asn Thr
705   710   715   720

Asn Asp Cys His Trp Cys Asn Asp His Cys Val Pro Val Asn His Ser
            725   730   735

Cys Thr Glu Gly Gln Ile Ser Ile Ala Lys Tyr Asp Asn Cys Pro Lys
        740   745   750

Asp Asn Pro Met Tyr Tyr Cys Asn Lys Lys Thr Ser Cys Arg Ser Cys
        755   760   765

Ala Leu Asp Gln Asn Cys Gln Trp Glu Pro Arg Asn Gln Glu Cys Ile
    770   775   780

Ala Leu Pro Glu Asn Ile Cys Gly Ile Gly Trp His Leu Val Gly Asn
785   790   795   800

Ser Cys Leu Lys Ile Thr Thr Ala Lys Glu Asn Tyr Asp Asn Ala Lys
            805   810   815

Leu Ser Cys Arg Asn His Asn Ala Phe Leu Ala Ser Leu Thr Ser Gln
        820   825   830

Lys Lys Val Glu Phe Val Leu Lys Gln Leu Arg Leu Met Gln Ser Ser
        835   840   845

Gln Ser Thr Ser Lys Leu Thr Leu Thr Pro Trp Val Gly Leu Arg Lys
    850   855   860

Ile Asn Val Ser Tyr Trp Cys Trp Glu Asp Met Ser Pro Phe Thr Asn
865   870   875   880

Ser Leu Leu Gln Trp Met Pro Ser Glu Pro Ser Asp Ala Gly Phe Cys
            885   890   895

Gly Ile Leu Ser Glu Pro Ser Thr Arg Gly Leu Lys Ala Ala Thr Cys
        900   905   910

Ile Asn Pro Leu Asn Gly Ser Val Cys Glu Arg Pro Ala Asn His Ser
        915   920   925

Ala Lys Gln Cys Arg Thr Pro Cys Ala Leu Arg Thr Ala Cys Gly Glu
    930   935   940

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Cys Thr Ser Ser Ser Ser Glu Cys Met Trp Cys Ser Asn Met Lys Gln
·945               950             955                 960

Cys Val Asp Ser Asn Ala Tyr Val Ala Ser Phe Pro Phe Gly Gln Cys
                965             970                 975

Met Glu Trp Tyr Thr Met Ser Ser Cys Pro Pro Glu Asn Cys Ser Gly
            980             985                 990

Tyr Cys Thr Cys Ser His Cys Leu Glu Gln Pro Gly Cys Gly Trp Cys
        995             1000                1005

Thr Asp Pro Ser Asn Thr Gly Lys Gly Lys Cys Ile Glu Gly Ser Tyr
    1010                1015                1020

Lys Gly Pro Val Lys Met Pro Ser His Ala Ser Thr Gly Asn Val Tyr
1025                1030             1035                1040

Pro Gln Pro Leu Leu Asn Ser Ser Met Cys Leu Glu Asp Ser Arg Tyr
            1045                1050                1055

Asn Trp Ser Phe Ile His Cys Pro Ala Cys Gln Cys Asn Gly His Ser
            1060                1065                1070

Lys Cys Ile Asn Gln Ser Ile Cys Glu Lys Cys Glu Asp Leu Thr Thr
    1075                1080                1085

Gly Lys His Cys Glu Thr Cys Ile Ser Gly Phe Tyr Gly Asp Pro Thr
    1090                1095                1100

Asn Gly Gly Lys Cys Gln Pro Cys Lys Cys Asn Gly His Ala Ser Leu
1105                1110                1115                1120

Cys Asn Thr Asn Thr Gly Lys Cys Phe Cys Thr Thr Lys Gly Val Lys
            1125                1130                1135

Gly Glu Glu Cys Gln Leu Cys Glu Val Glu Asn Arg Tyr Gln Gly Asn
            1140                1145                1150

Pro Leu Lys Gly Thr Cys Tyr Tyr Thr Leu Leu Ile Asp Tyr Gln Phe
    1155                1160                1165

Thr Phe Ser Leu Ser Gln Glu Asp Asp Arg Tyr Tyr Thr Ala Ile Asn
    1170                1175                1180

Phe Val Ala Thr Pro Asp Glu Gln Asn Arg Asp Leu Asp Met Phe Ile
1185                1190                1195                1200

Asn Ala Ser Lys Asn Phe Asn Leu Asn Ile Thr Trp Ala Thr Ser Phe
            1205                1210                1215

Pro Ala Gly Thr Gln Thr Gly Glu Glu Val Pro Val Val Ser Lys Thr
            1220                1225                1230

Asn Ile Lys Glu Tyr Lys Asp Ser Phe Ser Asn Glu Lys Phe Asp Phe
    1235                1240                1245
```

Arg Asn His Pro Asn Ile Thr Phe Phe Val Tyr Val Ser Asn Phe Thr
    1250   1255   1260

Trp Pro Ile Lys Ile Gln Val Arg Val Thr Ser
1265   1270   1275

<210> 37
<211> 883
<212> PRT
<213> Homo sapiens

<400> 37
Met Leu Glu Met Asn Ala Arg Ser Leu Gln Gln Lys Leu Glu Thr Glu
  1   5   10   15

Arg Glu Leu Lys Gln Arg Leu Leu Glu Glu Gln Ala Lys Leu Gln Gln
            20   25   30

Gln Met Asp Leu Gln Lys Asn His Ile Phe Arg Leu Thr Gln Gly Leu
         35   40   45

Gln Glu Ala Leu Asp Arg Ala Asp Leu Leu Lys Thr Glu Arg Ser Asp
     50   55   60

Leu Glu Tyr Gln Leu Glu Asn Ile Gln Val Leu Tyr Ser His Glu Lys
 65   70   75   80

Val Lys Met Glu Gly Thr Ile Ser Gln Gln Thr Lys Leu Ile Asp Phe
                85   90   95

Leu Gln Ala Lys Met Asp Gln Pro Ala Lys Lys Lys Val Pro Leu
            100   105   110

Gln Tyr Asn Glu Leu Lys Leu Ala Leu Glu Lys Glu Lys Ala Arg Cys
         115   120   125

Ala Glu Leu Glu Glu Ala Leu Gln Lys Thr Arg Ile Glu Leu Arg Ser
     130   135   140

Ala Arg Glu Glu Ala Ala His Arg Lys Ala Thr Asp His Pro His Pro
145   150   155   160

Ser Thr Pro Ala Thr Ala Arg Gln Gln Ile Ala Met Ser Ala Ile Val
                165   170   175

Arg Ser Pro Glu His Gln Pro Ser Ala Met Ser Leu Leu Ala Pro Pro
            180   185   190

Ser Ser Arg Arg Lys Glu Ser Ser Thr Pro Glu Glu Phe Ser Arg Arg
         195   200   205

Leu Lys Glu Arg Met His His Asn Ile Pro His Arg Phe Asn Val Gly
     210   215   220

Leu Asn Met Arg Ala Thr Lys Cys Ala Val Cys Leu Asp Thr Val His
225   230   235   240

109

Phe Gly Arg Gln Ala Ser Lys Cys Leu Glu Cys Gln Val Met Cys His
                245   250   255

Pro Lys Cys Ser Thr Cys Leu Pro Ala Thr Cys Gly Leu Pro Ala Glu
            260   265   270

Tyr Ala Thr His Phe Thr Glu Ala Phe Cys Arg Asp Lys Met Asn Ser
        275   280   285

Pro Gly Leu Gln Thr Lys Glu Pro Ser Ser Ser Leu His Leu Glu Gly
    290   295   300

Trp Met Lys Val Pro Arg Asn Asn Lys Arg Gly Gln Gln Gly Trp Asp
305   310   315   320

Arg Lys Tyr Ile Val Leu Glu Gly Ser Lys Val Leu Ile Tyr Asp Asn
            325   330   335

Glu Ala Arg Glu Ala Gly Gln Arg Pro Val Glu Glu Phe Glu Leu Cys
        340   345   350

Leu Pro Asp Gly Asp Val Ser Ile His Gly Ala Val Gly Ala Ser Glu
    355   360   365

Leu Ala Asn Thr Ala Lys Ala Asp Val Pro Tyr Ile Leu Lys Met Glu
    370   375   380

Ser His Pro His Thr Thr Cys Trp Pro Gly Arg Thr Leu Tyr Leu Leu
385   390   395   400

Ala Pro Ser Phe Pro Asp Lys Gln Arg Trp Val Thr Ala Leu Glu Ser
            405   410   415

Val Val Ala Gly Gly Arg Val Ser Arg Glu Lys Ala Glu Ala Asp Ala
            420   425   430

Lys Leu Leu Gly Asn Ser Leu Leu Lys Leu Glu Gly Asp Asp Arg Leu
        435   440   445

Asp Met Asn Cys Thr Leu Pro Phe Ser Asp Gln Val Val Leu Val Gly
    450   455   460

Thr Glu Glu Gly Leu Tyr Ala Leu Asn Val Leu Lys Asn Ser Leu Thr
465   470   475   480

His Val Pro Gly Ile Gly Ala Val Phe Gln Ile Tyr Ile Ile Lys Asp
            485   490   495

Leu Glu Lys Leu Leu Met Ile Ala Gly Glu Glu Arg Ala Leu Cys Leu
        500   505   510

Val Asp Val Lys Lys Val Lys Gln Ser Leu Ala Gln Ser His Leu Pro
    515   520   525

Ala Gln Pro Asp Ile Ser Pro Asn Ile Phe Glu Ala Val Lys Gly Cys
    530   535   540

110

```
His Leu Phe Gly Ala Gly Lys Ile Glu Asn Gly Leu Cys Ile Cys Ala
545             550             555             560

Ala Met Pro Ser Lys Val Val Ile Leu Arg Tyr Asn Glu Asn Leu Ser
            565             570             575

Lys Tyr Cys Ile Arg Lys Glu Ile Glu Thr Ser Glu Pro Cys Ser Cys
            580             585             590

Ile His Phe Thr Asn Tyr Ser Ile Leu Ile Gly Thr Asn Lys Phe Tyr
            595             600             605

Glu Ile Asp Met Lys Gln Tyr Thr Leu Glu Glu Phe Leu Asp Lys Asn
    610             615             620

Asp His Ser Leu Ala Pro Ala Val Phe Ala Ala Ser Ser Asn Ser Phe
625             630             635             640

Pro Val Ser Ile Val Gln Val Asn Ser Ala Gly Gln Arg Glu Glu Tyr
            645             650             655

Leu Leu Cys Phe His Glu Phe Gly Val Phe Val Asp Ser Tyr Gly Arg
            660             665             670

Arg Ser Arg Thr Asp Asp Leu Lys Trp Ser Arg Leu Pro Leu Ala Phe
            675             680             685

Ala Tyr Arg Glu Pro Tyr Leu Phe Val Thr His Phe Asn Ser Leu Glu
    690             695             700

Val Ile Glu Ile Gln Ala Arg Ser Ser Ala Gly Thr Pro Ala Arg Ala
705             710             715             720

Tyr Leu Asp Ile Pro Asn Pro Arg Tyr Leu Gly Pro Ala Ile Ser Ser
            725             730             735

Gly Ala Ile Tyr Leu Ala Ser Ser Tyr Gln Asp Lys Leu Arg Val Ile
            740             745             750

Cys Cys Lys Gly Asn Leu Val Lys Glu Ser Gly Thr Glu His His Arg
            755             760             765

Gly Pro Ser Thr Ser Arg Ser Ser Pro Asn Lys Arg Gly Pro Pro Thr
    770             775             780

Tyr Asn Glu His Ile Thr Lys Arg Val Ala Ser Ser Pro Ala Pro Pro
785             790             795             800

Glu Gly Pro Ser His Pro Arg Glu Pro Ser Thr Pro His Arg Tyr Arg
            805             810             815

Glu Gly Arg Thr Glu Leu Arg Arg Asp Lys Ser Pro Gly Arg Pro Leu
            820             825             830

Glu Arg Glu Lys Ser Pro Gly Arg Met Leu Ser Thr Arg Arg Glu Arg
    835             840             845
```

Ser Pro Gly Arg Leu Phe Glu Asp Ser Ser Arg Gly Arg Leu Pro Ala
    850   855   860

Gly Ala Val Arg Thr Pro Leu Ser Gln Val Asn Lys Val Trp Asp Gln
865   870   875   880

Ser Ser Val

<210> 38
<211> 1286
<212> PRT
<213> Homo sapiens

<400> 38
Val Leu Asp Asn Gln Ile Lys Lys Asp Leu Ala Asp Lys Glu Thr Leu
  1   5   10   15

Glu Asn Met Met Gln Arg His Glu Glu Glu Ala His Glu Lys Gly Lys
                20   25   30

Ile Leu Ser Glu Gln Lys Ala Met Ile Asn Ala Met Asp Ser Lys Ile
          35   40   45

Arg Ser Leu Glu Gln Arg Ile Val Glu Leu Ser Glu Ala Asn Lys Leu
      50   55   60

Ala Ala Asn Ser Ser Leu Phe Thr Gln Arg Asn Met Lys Ala Gln Glu
 65   70   75   80

Glu Met Ile Ser Glu Leu Arg Gln Gln Lys Phe Tyr Leu Glu Thr Gln
                85   90   95

Ala Gly Lys Leu Glu Ala Gln Asn Arg Lys Leu Glu Glu Gln Leu Glu
          100   105   110

Lys Ile Ser His Gln Asp His Ser Asp Lys Asn Arg Leu Leu Glu Leu
          115   120   125

Glu Thr Arg Leu Arg Glu Val Ser Leu Glu His Glu Glu Gln Lys Leu
      130   135   140

Glu Leu Lys Arg Gln Leu Thr Glu Leu Gln Leu Ser Leu Gln Glu Arg
145   150   155   160

Glu Ser Gln Leu Thr Ala Leu Gln Ala Ala Arg Ala Ala Leu Glu Ser
                165   170   175

Gln Leu Arg Gln Ala Lys Thr Glu Leu Glu Glu Thr Thr Ala Glu Ala
          180   185   190

Glu Glu Glu Ile Gln Ala Leu Thr Ala His Arg Asp Glu Ile Gln Arg
          195   200   205

Lys Phe Asp Ala Leu Arg Asn Ser Cys Thr Val Ile Thr Asp Leu Glu

112

Glu Gln Leu Asn Gln Leu Thr Glu Asp Asn Ala Glu Leu Asn Asn Gln
225   230   235   240

Asn Phe Tyr Leu Ser Lys Gln Leu Asp Glu Ala Ser Gly Ala Asn Asp
                   245   250   255

Glu Ile Val Gln Leu Arg Ser Glu Val Asp His Leu Arg Arg Glu Ile
                   260   265   270

Thr Glu Arg Glu Met Gln Leu Thr Ser Gln Lys Gln Thr Met Glu Ala
                   275   280   285

Leu Lys Thr Thr Cys Thr Met Leu Glu Glu Gln Val Met Asp Leu Glu
                   290   295   300

Ala Leu Asn Asp Glu Leu Leu Glu Lys Glu Arg Gln Trp Glu Ala Trp
305   310   315   320

Arg Ser Val Leu Gly Asp Glu Lys Ser Gln Phe Glu Cys Arg Val Arg
                   325   330   335

Glu Leu Gln Arg Met Leu Asp Thr Glu Lys Gln Ser Arg Ala Arg Ala
                   340   345   350

Asp Gln Arg Ile Thr Glu Ser Arg Gln Val Val Glu Leu Ala Val Lys
                   355   360   365

Glu His Lys Ala Glu Ile Leu Ala Leu Gln Gln Ala Leu Lys Glu Gln
                   370   375   380

Lys Leu Lys Ala Glu Ser Leu Ser Asp Lys Leu Asn Asp Leu Glu Lys
385   390   395   400

Lys His Ala Met Leu Glu Met Asn Ala Arg Ser Leu Gln Gln Lys Leu
                   405   410   415

Glu Thr Glu Arg Glu Leu Lys Gln Arg Leu Leu Glu Glu Gln Ala Lys
                   420   425   430

Leu Gln Gln Gln Met Asp Leu Gln Lys Asn His Ile Phe Arg Leu Thr
                   435   440   445

Gln Gly Leu Gln Glu Ala Leu Asp Arg Ala Asp Leu Leu Lys Thr Glu
                   450   455   460

Arg Ser Asp Leu Glu Tyr Gln Leu Glu Asn Ile Gln Val Leu Tyr Ser
465   470   475   480

His Glu Lys Val Lys Met Glu Gly Thr Ile Ser Gln Gln Thr Lys Leu
                   485   490   495

Ile Asp Phe Leu Gln Ala Lys Met Asp Gln Pro Ala Lys Lys Lys Lys
                   500   505   510

Val Pro Leu Gln Tyr Asn Glu Leu Lys Leu Ala Leu Glu Lys Glu Lys

```
                515                      520                      525

      Ala Arg Cys Ala Glu Leu Glu Glu Ala Leu Gln Lys Thr Arg Ile Glu
          530                  535                  540

      Leu Arg Ser Ala Arg Glu Glu Ala Ala His Arg Lys Ala Thr Asp His
      545                  550                  555                  560

      Pro His Pro Ser Thr Pro Ala Thr Ala Arg Gln Gln Ile Ala Met Ser
                      565                  570                  575

      Ala Ile Val Arg Ser Pro Glu His Gln Pro Ser Ala Met Ser Leu Leu
                  580                  585                  590

      Ala Pro Pro Ser Ser Arg Arg Lys Glu Ser Ser Thr Pro Glu Glu Phe
              595                  600                  605

      Ser Arg Arg Leu Lys Glu Arg Met His His Asn Ile Pro His Arg Phe
          610                  615                  620

      Asn Val Gly Leu Asn Met Arg Ala Thr Lys Cys Ala Val Cys Leu Asp
      625                  630                  635                  640

      Thr Val His Phe Gly Arg Gln Ala Ser Lys Cys Leu Glu Cys Gln Val
                      645                  650                  655

      Met Cys His Pro Lys Cys Ser Thr Cys Leu Pro Ala Thr Cys Gly Leu
                  660                  665                  670

     .Pro Ala Glu Tyr Ala Thr His Phe Thr Glu Ala Phe Cys Arg Asp Lys
                  675                  680                  685

      Met Asn Ser Pro Gly Leu Gln Thr Lys Glu Pro Ser Ser Ser Leu His
              690                  695                  700

      Leu Glu Gly Trp Met Lys Val Pro Arg Asn Asn Lys Arg Gly Gln Gln
      705                  710                  715                  720

      Gly Trp Asp Arg Lys Tyr Ile Val Leu Glu Gly Ser Lys Val Leu Ile
                      725                  730                  735

      Tyr Asp Asn Glu Ala Arg Glu Ala Gly Gln Arg Pro Val Glu Glu Phe
                  740                  745                  750

      Glu Leu Cys Leu Pro Asp Gly Asp Val Ser Ile His Gly Ala Val Gly
              755                  760                  765

      Ala Ser Glu Leu Ala Asn Thr Ala Lys Ala Asp Val Pro Tyr Ile Leu
          770                  775                  780

      Lys Met Glu Ser His Pro His Thr Thr Cys Trp Pro Gly Arg Thr Leu
      785                  790  ,               795                  800

      Tyr Leu Leu Ala Pro Ser Phe Pro Asp Lys Gln Arg Trp Val Thr Ala
                      805                  810                  815

      Leu Glu Ser Val Val Ala Gly Gly Arg Val Ser Arg Glu Lys Ala Glu


                                    114
```

Ala Asp Ala Lys Leu Leu Gly Asn Ser Leu Leu Lys Leu Glu Gly Asp
        835   840   845

Asp Arg Leu Asp Met Asn Cys Thr Leu Pro Phe Ser Asp Gln Val Val
        850   855   860

Leu Val Gly Thr Glu Glu Gly Leu Tyr Ala Leu Asn Val Leu Lys Asn
865   870   875   880

Ser Leu Thr His Val Pro Gly Ile Gly Ala Val Phe Gln Ile Tyr Ile
                885   890   895

Ile Lys Asp Leu Glu Lys Leu Leu Met Ile Ala Gly Glu Glu Arg Ala
        900   905   910

Leu Cys Leu Val Asp Val Lys Lys Val Lys Gln Ser Leu Ala Gln Ser
        915   920   925

His Leu Pro Ala Gln Pro Asp Ile Ser Pro Asn Ile Phe Glu Ala Val
        930   935   940

Lys Gly Cys His Leu Phe Gly Ala Gly Lys Ile Glu Asn Gly Leu Cys
945   950   955   960

Ile Cys Ala Ala Met Pro Ser Lys Val Val Ile Leu Arg Tyr Asn Glu
                965   970   975

Asn Leu Ser Lys Tyr Cys Ile Arg Lys Glu Ile Glu Thr Ser Glu Pro
                980   985   990

Cys Ser Cys Ile His Phe Thr Asn Tyr Ser Ile Leu Ile Gly Thr Asn
        995   1000   1005

Lys Phe Tyr Glu Ile Asp Met Lys Gln Tyr Thr Leu Glu Glu Phe Leu
        1010   1015   1020

Asp Lys Asn Asp His Ser Leu Ala Pro Ala Val Phe Ala Ala Ser Ser
1025   1030   1035   1040

Asn Ser Phe Pro Val Ser Ile Val Gln Val Asn Ser Ala Gly Gln Arg
                1045   1050   1055

Glu Glu Tyr Leu Leu Cys Phe His Glu Phe Gly Val Phe Val Asp Ser
        1060   1065   1070

Tyr Gly Arg Arg Ser Arg Thr Asp Asp Leu Lys Trp Ser Arg Leu Pro
        1075   1080   1085

Leu Ala Phe Ala Tyr Arg Glu Pro Tyr Leu Phe Val Thr His Phe Asn
        1090   1095   1100

Ser Leu Glu Val Ile Glu Ile Gln Ala Arg Ser Ser Ala Gly Thr Pro
1105   1110   1115   1120

Ala Arg Ala Tyr Leu Asp Ile Pro Asn Pro Arg Tyr Leu Gly Pro Ala

115

```
                    1125                    1130                    1135

Ile Ser Ser Gly Ala Ile Tyr Leu Ala Ser Ser Tyr Gln Asp Lys Leu
          1140                    1145                    1150

Arg Val Ile Cys Cys Lys Gly Asn Leu Val Lys Glu Ser Gly Thr Glu
          1155                    1160                    1165

His His Arg Gly Pro Ser Thr Ser Arg Ser Ser Pro Asn Lys Arg Gly
     1170                    · 1175                    1180

Pro Pro Thr Tyr Asn Glu His Ile Thr Lys Arg Val Ala Ser Ser Pro
1185                    1190                    1195                    1200

Ala Pro Pro Glu Gly Pro Ser His Pro Arg Glu Pro Ser Thr Pro His
          1205                    1210                    1215

Arg Tyr Arg Glu Gly Arg Thr Glu Leu Arg Arg Asp Lys Ser Pro Gly
          1220                    1225                    1230

Arg Pro Leu Glu Arg Glu Lys Ser Pro Gly Arg Met Leu Ser Thr Arg
          1235                    1240                    1245

Arg Glu Arg Ser Pro Gly Arg Leu Phe Glu Asp Ser Ser Arg Gly Arg
     1250                    1255                    1260

Leu Pro Ala Gly Ala Val Arg Thr Pro Leu Ser Gln Val Asn Lys Val
1265                    1270                    1275                    1280

Trp Asp Gln Ser Ser Val
               1285


<210> 39
<211> 940
<212> PRT
<213> Homo sapiens

<400> 39
Gln Ser Arg Ala Arg Ala Asp Gln Arg Ile Thr Glu Ser Arg Gln Val
   1               5                  10                    15

Val Glu Leu Ala Val Lys Glu His Lys Ala Glu Ile Leu Ala Leu Gln
          20                  25                    30

Gln Ala Leu Lys Glu Gln Lys Leu Lys Ala Glu Ser Leu Ser Asp Lys
          35                  40                    45

Leu Asn Asp Leu Glu Lys Lys His Ala Met Leu Glu Met Asn Ala Arg
     50                  55                    60

Ser Leu Gln Gln Lys Leu Glu Thr Glu Arg Glu Leu Lys Gln Arg Leu
  65                  70                    75                    80

Leu Glu Glu Gln Ala Lys Leu Gln Gln Gln Met Asp Leu Gln Lys Asn
               85                  90                    95
```

116

```
His Ile Phe Arg Leu Thr Gln Gly Leu Gln Glu Ala Leu Asp Arg Ala
            100                 105                 110

Asp Leu Leu Lys Thr Glu Arg Ser Asp Leu Glu Tyr Gln Leu Glu Asn
            115                 120                 125

Ile Gln Val Leu Tyr Ser His Glu Lys Val Lys Met Glu Gly Thr Ile
    130                 135                 140

Ser Gln Gln Thr Lys Leu Ile Asp Phe Leu Gln Ala Lys Met Asp Gln
145                 150                 155                 160

Pro Ala Lys Lys Lys Lys Val Pro Leu Gln Tyr Asn Glu Leu Lys Leu
                165                 170                 175

Ala Leu Glu Lys Glu Lys Ala Arg Cys Ala Glu Leu Glu Glu Ala Leu
            180                 185                 190

Gln Lys Thr Arg Ile Glu Leu Arg Ser Ala Arg Glu Glu Ala Ala His
            195                 200                 205

Arg Lys Ala Thr Asp His Pro His Pro Ser Thr Pro Ala Thr Ala Arg
    210                 215                 220

Gln Gln Ile Ala Met Ser Ala Ile Val Arg Ser Pro Glu His Gln Pro
225                 230                 235                 240

Ser Ala Met Ser Leu Leu Ala Pro Pro Ser Ser Arg Arg Lys Glu Ser
                245                 250                 255

Ser Thr Pro Glu Glu Phe Ser Arg Arg Leu Lys Glu Arg Met His His
            260                 265                 270

Asn Ile Pro His Arg Phe Asn Val Gly Leu Asn Met Arg Ala Thr Lys
    275                 280                 285

Cys Ala Val Cys Leu Asp Thr Val His Phe Gly Arg Gln Ala Ser Lys
    290                 295                 300

Cys Leu Glu Cys Gln Val Met Cys His Pro Lys Cys Ser Thr Cys Leu
305                 310                 315                 320

Pro Ala Thr Cys Gly Leu Pro Ala Glu Tyr Ala Thr His Phe Thr Glu
            325                 330                 335

Ala Phe Cys Arg Asp Lys Met Asn Ser Pro Gly Leu Gln Thr Lys Glu
            340                 345                 350

Pro Ser Ser Ser Leu His Leu Glu Gly Trp Met Lys Val Pro Arg Asn
            355                 360                 365

Asn Lys Arg Gly Gln Gln Gly Trp Asp Arg Lys Tyr Ile Val Leu Glu
    370                 375                 380

Gly Ser Lys Val Leu Ile Tyr Asp Asn Glu Ala Arg Glu Ala Gly Gln
385                 390                 395                 400
```

117

```
Arg Pro Val Glu Glu Phe Glu Leu Cys Leu Pro Asp Gly Asp Val Ser
            405             410             415

Ile His Gly Ala Val Gly Ala Ser Glu Leu Ala Asn Thr Ala Lys Ala
            420             425             430

Asp Val Pro Tyr Ile Leu Lys Met Glu Ser His Pro His Thr Thr Cys
            435             440             445

Trp Pro Gly Arg Thr Leu Tyr Leu Leu Ala Pro Ser Phe Pro Asp Lys
    450             455             460

Gln Arg Trp Val Thr Ala Leu Glu Ser Val Val Ala Gly Gly Arg Val
465             470             475             480

Ser Arg Glu Lys Ala Glu Ala Asp Ala Lys Leu Leu Gly Asn Ser Leu
            485             490             495

Leu Lys Leu Glu Gly Asp Asp Arg Leu Asp Met Asn Cys Thr Leu Pro
            500             505             510

Phe Ser Asp Gln Val Val Leu Val Gly Thr Glu Glu Gly Leu Tyr Ala
            515             520             525

Leu Asn Val Leu Lys Asn Ser Leu Thr His Val Pro Gly Ile Gly Ala
    530             535             540

Val Phe Gln Ile Tyr Ile Ile Lys Asp Leu Glu Lys Leu Leu Met Ile
545             550             555             560

Ala Gly Glu Glu Arg Ala Leu Cys Leu Val Asp Val Lys Lys Val Lys
            565             570             575

Gln Ser Leu Ala Gln Ser His Leu Pro Ala Gln Pro Asp Ile Ser Pro
            580             585             590

Asn Ile Phe Glu Ala Val Lys Gly Cys His Leu Phe Gly Ala Gly Lys
    595             600             605

Ile Glu Asn Gly Leu Cys Ile Cys Ala Ala Met Pro Ser Lys Val Val
    610             615             620

Ile Leu Arg Tyr Asn Glu Asn Leu Ser Lys Tyr Cys Ile Arg Lys Glu
625             630             635             640

Ile Glu Thr Ser Glu Pro Cys Ser Cys Ile His Phe Thr Asn Tyr Ser
            645             650             655

Ile Leu Ile Gly Thr Asn Lys Phe Tyr Glu Ile Asp Met Lys Gln Tyr
            660             665             670

Thr Leu Glu Glu Phe Leu Asp Lys Asn Asp His Ser Leu Ala Pro Ala
    675             680             685

Val Phe Ala Ala Ser Ser Asn Ser Phe Pro Val Ser Ile Val Gln Val
    690             695             700
```

118

```
Asn Ser Ala Gly Gln Arg Glu Glu Tyr Leu Leu Cys Phe His Glu Phe
705             710             715             720

Gly Val Phe Val Asp Ser Tyr Gly Arg Arg Ser Arg Thr Asp Asp Leu
            725             730             735

Lys Trp Ser Arg Leu Pro Leu Ala Phe Ala Tyr Arg Glu Pro Tyr Leu
        740             745             750

Phe Val Thr His Phe Asn Ser Leu Glu Val Ile Glu Ile Gln Ala Arg
        755             760             765

Ser Ser Ala Gly Thr Pro Ala Arg Ala Tyr Leu Asp Ile Pro Asn Pro
    770             775             780

Arg Tyr Leu Gly Pro Ala Ile Ser Ser Gly Ala Ile Tyr Leu Ala Ser
785             790             795             800

Ser Tyr Gln Asp Lys Leu Arg Val Ile Cys Cys Lys Gly Asn Leu Val
            805             810             815

Lys Glu Ser Gly Thr Glu His His Arg Gly Pro Ser Thr Ser Arg Ser
            820             825             830

Ser Pro Asn Lys Arg Gly Pro Pro Thr Tyr Asn Glu His Ile Thr Lys
        835             840             845

Arg Val Ala Ser Ser Pro Ala Pro Pro Glu Gly Pro Ser His Pro Arg
    850             855             860

Glu Pro Ser Thr Pro His Arg Tyr Arg Glu Gly Arg Thr Glu Leu Arg
865             870             875             880

Arg Asp Lys Ser Pro Gly Arg Pro Leu Glu Arg Glu Lys Ser Pro Gly
            885             890             895

Arg Met Leu Ser Thr Arg Arg Glu Arg Ser Pro Gly Arg Leu Phe Glu
            900             905             910

Asp Ser Ser Arg Gly Arg Leu Pro Ala Gly Ala Val Arg Thr Pro Leu
            915             920             925

Ser Gln Val Asn Lys Val Trp Asp Gln Ser Ser Val
    930             935             940


<210> 40
<211> 1641
<212> PRT
<213> Mus musculus

<400> 40
Pro Phe Val Pro Thr Leu Lys Ser Asp Asp Asp Thr Ser Asn Phe Asp
 1           5               10              15

Glu Pro Glu Lys Asn Ser Trp Val Ser Ser Ser Val Cys Gln Leu Ser
            20              25              30
```

119

```
Pro Ser Gly Phe Ser Gly Glu Glu Leu Pro Phe Val Gly Phe Ser Tyr
        35                  40                  45

Ser Lys Ala Leu Gly Tyr Leu Gly Arg Ser Glu Ser Val Val Ser Ser
        50                  55                  60

Leu Asp Ser Pro Ala Lys Val Ser Ser Met Glu Lys Lys Leu Leu Ile
65                  70                  75                  80

Lys Ser Lys Glu Leu Gln Asp Ser Gln Asp Lys Cys His Lys Met Glu
                85                  90                  95

Gln Glu Met Thr Arg Leu His Arg Arg Val Ser Glu Val Glu Ala Val
                100                 105                 110

Leu Ser Gln Lys Glu Val Glu Leu Lys Ala Ser Glu Thr Gln Arg Ser
            115                 120                 125

Leu Leu Glu Gln Asp Leu Ala Thr Tyr Ile Thr Glu Cys Ser Ser Leu
        130                 135                 140

Lys Arg Ser Leu Glu Gln Ala Arg Met Glu Val Ser Gln Glu Asp Asp
145                 150                 155                 160

Lys Ala Leu Gln Leu Leu His Asp Ile Arg Glu Gln Ser Arg Lys Leu
            165                 170                 175

Gln Glu Ile Lys Glu Gln Glu Tyr Gln Ala Gln Val Glu Glu Met Arg
            180                 185                 190

Leu Met Met Asn Gln Leu Glu Glu Asp Leu Val Ser Ala Arg Arg Arg
        195                 200                 205

Ser Asp Leu Tyr Glu Ser Glu Leu Arg Glu Ser Arg Leu Ala Ala Glu
    210                 215                 220

Glu Phe Lys Arg Lys Ala Asn Glu Cys Gln His Lys Leu Met Lys Ala
225                 230                 235                 240

Lys Asp Gln Gly Lys Pro Glu Val Gly Glu Tyr Ser Lys Leu Glu Lys
            245                 250                 255

Ile Asn Ala Glu Gln Gln Leu Lys Ile Gln Glu Leu Gln Glu Lys Leu
        260                 265                 270

Glu Lys Ala Val Lys Ala Ser Thr Glu Ala Thr Glu Leu Leu Gln Asn
        275                 280                 285

Ile Arg Gln Ala Lys Glu Arg Ala Glu Arg Glu Leu Glu Lys Leu His
    290                 295                 300

Asn Arg Glu Asp Ser Ser Glu Gly Ile Lys Lys Lys Leu Val Glu Ala
305                 310                 315                 320

Glu Glu Leu Glu Glu Lys His Arg Glu Ala Gln Val Ser Ala Gln His
            325                 330                 335
```

120

```
Leu Glu Val His Leu Lys Gln Lys Glu Gln His Tyr Glu Glu Lys Ile
        340             345             350

Lys Val Leu Asp Asn Gln Ile Lys Lys Asp Leu Ala Asp Lys Glu Ser
        355             360             365

Leu Glu Asn Met Met Gln Arg His Glu Glu Glu Ala His Glu Lys Gly
    370             375             380

Lys Ile Leu Ser Glu Gln Lys Ala Met Ile Asn Ala Met Asp Ser Lys
385             390             395             400

Ile Arg Ser Leu Glu Gln Arg Ile Val Glu Leu Ser Glu Ala Asn Lys
            405             410             415

Leu Ala Ala Asn Ser Ser Leu Phe Thr Gln Arg Asn Met Lys Ala Gln
            420             425             430

Glu Glu Met Ile Ser Glu Leu Arg Gln Gln Lys Phe Tyr Leu Glu Thr
        435             440             445

Gln Ala Gly Lys Leu Glu Ala Gln Asn Arg Lys Leu Glu Glu Gln Leu
    450             455             460

Glu Lys Ile Ser His Gln Asp His Ser Asp Lys Ser Arg Leu Leu Glu
465             470             475             480

Leu Glu Thr Arg Leu Arg Glu Val Ser Leu Glu His Glu Glu Gln Lys
            485             490             495

Leu Glu Leu Lys Arg Gln Leu Thr Glu Leu Gln Leu Ser Leu Gln Glu
        500             505             510

Arg Glu Ser Gln Leu Thr Ala Leu Gln Ala Ala Arg Ala Ala Leu Glu
        515             520             525

Ser Gln Leu Arg Gln Ala Lys Thr Glu Leu Glu Glu Thr Thr Ala Glu
    530             535             540

Ala Glu Glu Glu Ile Gln Ala Leu Thr Ala His Arg Asp Glu Ile Gln
545             550             555             560

Arg Lys Phe Asp Ala Leu Arg Asn Ser Cys Thr Val Ile Thr Asp Leu
            565             570             575

Glu Glu Gln Leu Asn Gln Leu Thr Glu Asp Asn Ala Glu Leu Asn Asn
        580             585             590

Gln Asn Phe Tyr Leu Ser Lys Gln Leu Asp Glu Ala Ser Gly Ala Asn
        595             600             605

Asp Glu Ile Val Gln Leu Arg Ser Glu Val Asp His Leu Arg Arg Glu
    610             615             620

Ile Thr Glu Arg Glu Met Gln Leu Thr Ser Gln Lys Gln Thr Met Glu
625             630             635             640
```

121

```
Ala Leu Lys Thr Thr Cys Thr Met Leu Glu Glu Gln Val Leu Asp Leu
             645             650             655

Glu Ala Leu Asn Asp Glu Leu Leu Glu Lys Glu Arg Gln Trp Glu Ala
             660             665             670

Trp Arg Ser Val Leu Gly Asp Glu Lys Ser Gln Phe Glu Cys Arg Val
             675             680             685

Arg Glu Leu Gln Arg Met Leu Asp Thr Glu Lys Gln Ser Arg Ala Arg
     690             695             700

Ala Asp Gln Arg Ile Thr Glu Ser Arg Gln Val Val Glu Leu Ala Val
705             710             715             720

Lys Glu His Lys Ala Glu Ile Leu Ala Leu Gln Gln Ala Leu Lys Glu
             725             730             735

Gln Lys Leu Lys Ala Glu Ser Leu Ser Asp Lys Leu Asn Asp Leu Glu
             740             745             750

Lys Lys His Ala Met Leu Glu Met Asn Ala Arg Ser Leu Gln Gln Lys
             755             760             765

Leu Glu Thr Glu Arg Glu Leu Lys Gln Arg Leu Leu Glu Glu Gln Ala
     770             775             780

Lys Leu Gln Gln Gln Met Asp Leu Gln Lys Asn His Ile Phe Arg Leu
785             790             795             800

Thr Gln Gly Leu Gln Glu Ala Leu Asp Arg Ala Asp Leu Leu Lys Thr
             805             810             815

Glu Arg Ser Asp Leu Glu Tyr Gln Leu Glu Asn Ile Gln Val Leu Tyr
             820             825             830

Ser His Glu Lys Val Lys Met Glu Gly Thr Ile Ser Gln Gln Thr Lys
             835             840             845

Leu Ile Asp Phe Leu Gln Ala Lys Met Asp Gln Pro Ala Lys Lys Lys
     850             855             860

Lys Val Pro Leu Gln Tyr Asn Glu Leu Lys Leu Ala Leu Glu Lys Glu
865             870             875             880

Lys Ala Arg Cys Ala Glu Leu Glu Glu Ala Leu Gln Lys Thr Arg Ile
             885             890             895

Glu Leu Arg Ser Ala Arg Glu Glu Ala Ala His Arg Lys Ala Thr Asp
             900             905             910

His Pro His Pro Ser Thr Pro Ala Thr Ala Arg Gln Gln Ile Ala Met
             915             920             925

Ser Ala Ile Val Arg Ser Pro Glu His Gln Pro Ser Ala Met Ser Leu
             930             935             940
```

```
Leu Ala Pro Pro Ser Ser Arg Arg Lys Glu Ser Ser Thr Pro Glu Glu
945                 950                 955                 960

Phe Ser Arg Arg Leu Lys Glu Arg Met His His Asn Ile Pro His Arg
                965                 970                 975

Phe Asn Val Gly Leu Asn Met Arg Ala Thr Lys Cys Ala Val Cys Leu
          · 980                 985                 990

Asp Thr Val His Phe Gly Arg Gln Ala Ser Lys Cys Leu Glu Cys Gln
          995                 1000                1005

Val Met Cys His Pro Lys Cys Ser Thr Cys Leu Pro Ala Thr Cys Gly
     1010                1015                1020

Leu Pro Ala Glu Tyr Ala Thr His Phe Thr Glu Ala Phe Cys Arg Asp
1025                1030                1035                1040

Lys Met Asn Ser Pro Gly Leu Gln Ser Lys Glu Pro Gly Ser Ser Leu
               1045                1050                1055

His Leu Glu Gly Trp Met Lys Val Pro Arg Asn Asn Lys Arg Gly Gln
          1060                1065                1070

Gln Gly Trp Asp Arg Lys Tyr Ile Val Leu Glu Gly Ser Lys Val Leu
          1075                1080                1085

Ile Tyr Asp Asn Glu Ala Arg Glu Ala Gly Gln Arg Pro Val Glu Glu
     1090                1095                1100

Phe Glu Leu Cys Leu Pro Asp Gly Asp Val Ser Ile His Gly Ala Val
1105                1110                1115                1120

Gly Ala Ser Glu Leu Ala Asn Thr Ala Lys Ala Asp Val Pro Tyr Ile
          1125                1130                1135

Leu Lys Met Glu Ser His Pro His Thr Thr Cys Trp Pro Gly Arg Thr
          1140                1145                1150

Leu Tyr Leu Leu Ala Pro Ser Phe Pro Asp Lys Gln Arg Trp Val Thr
          1155                1160                1165

Ala Leu Glu Ser Val Val Ala Gly Gly Arg Val Ser Arg Glu Lys Ala
     1170                1175                1180

Glu Ala Asp Ala Lys Leu Leu Gly Asn Ser Leu Leu Lys Leu Glu Gly
1185                1190                1195                1200

Asp Asp Arg Leu Asp Met Asn Cys Thr Leu Pro Phe Ser Asp Gln Val
          1205                1210                1215

Val Leu Val Gly Thr Glu Glu Gly Leu Tyr Ala Leu Asn Val Leu Lys
          1220                1225                1230

Asn Ser Leu Thr His Ile Pro Gly Ile Gly Ala Val Phe Gln Ile Tyr
     1235                1240                1245


                              123
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```
Ile Ile Lys Asp Leu Glu Lys Leu Leu Met Ile Ala Gly Glu Glu Arg
    1250            1255            1260

Ala Leu Cys Leu Val Asp Val Lys Lys Val Lys Gln Ser Leu Ala Gln
1265            1270            1275            1280

Ser His Leu Pro Ala Gln Pro Asp Val Ser Pro Asn Ile Phe Glu Ala
            1285            1290            1295

Val Lys Gly Cys His Leu Phe Ala Ala Gly Lys Ile Glu Asn Ser Leu
            1300            1305            1310

Cys Ile Cys Ala Ala Met Pro Ser Lys Val Val Ile Leu Arg Tyr Asn
    1315            1320            1325

Asp Asn Leu Ser Lys Tyr Cys Ile Arg Lys Glu Ile Glu Thr Ser Glu
    1330            1335            1340

Pro Cys Ser Cys Ile His Phe Thr Asn Tyr Ser Ile Leu Ile Gly Thr
1345            1350            1355            1360

Asn Lys Phe Tyr Glu Ile Asp Met Lys Gln Tyr Thr Leu Asp Glu Phe
            1365            1370            1375

Leu Asp Lys Asn Asp His Ser Leu Ala Pro Ala Val Phe Ala Ser Ser
            1380            1385            1390

Ser Asn Ser Phe Pro Val Ser Ile Val Gln Ala Asn Ser Ala Gly Gln
            1395            1400            1405

Arg Glu Glu Tyr Leu Leu Cys Phe His Glu Phe Gly Val Phe Val Asp
    1410            1415            1420

Ser Tyr Gly Arg Arg Ser Arg Thr Asp Asp Leu Lys Trp Ser Arg Leu
1425            1430            1435            1440

Pro Leu Ala Phe Ala Tyr Arg Glu Pro Tyr Leu Phe Val Thr His Phe
            1445            1450            1455

Asn Ser Leu Glu Val Ile Glu Ile Gln Ala Arg Ser Ser Leu Gly Ser
            1460            1465            1470

Pro Ala Arg Ala Tyr Leu Glu Ile Pro Asn Pro Arg Tyr Leu Gly Pro
    1475            1480            1485

Ala Ile Ser Ser Gly Ala Ile Tyr Leu Ala Ser Ser Tyr Gln Asp Lys
    1490            1495            1500

Leu Arg Val Ile Cys Cys Lys Gly Asn Leu Val Lys Glu Ser Gly Thr
1505            1510            1515            1520

Glu Gln His Arg Val Pro Ser Thr Ser Arg Ser Ser Pro Asn Lys Arg
            1525            1530            1535

Gly Pro Pro Thr Tyr Asn Glu His Ile Thr Lys Arg Val Ala Ser Ser
    1540            1545            1550
```

Pro Ala Pro Pro Glu Gly Pro Ser His Pro Arg Glu Pro Ser Thr Pro
        1555   1560   1565

His Arg Tyr Arg Asp Arg Glu Gly Arg Thr Glu Leu Arg Arg Asp Lys
    1570   1575   1580

Ser Pro Gly Arg Pro Leu Glu Arg Glu Lys Ser Pro Gly Arg Met Leu
1585   1590   1595   1600

Ser Thr Arg Arg Glu Arg Ser Pro Gly Arg Leu Phe Glu Asp Ser Ser
            1605   1610   1615

Arg Gly Arg Leu Pro Ala Gly Ala Val Arg Thr Pro Leu Ser Gln Val
            1620   1625   1630

Asn Lys Val Trp Asp Gln Ser Ser Val
        1635   1640

<210> 41
<211> 1597
<212> PRT
<213> Mus musculus

<400> 41
Met Leu Leu Gly Glu Glu Ala Met Met Glu Gln Glu Met Thr Arg Leu
  1   5   10   15

His Arg Arg Val Ser Glu Val Glu Ala Val Leu Ser Gln Lys Glu Val
            20   25   30

Glu Leu Lys Ala Ser Glu Thr Gln Arg Ser Leu Leu Glu Gln Asp Leu
        35   40   45

Ala Thr Tyr Ile Thr Glu Cys Ser Ser Leu Lys Arg Ser Leu Glu Gln
    50   55   60

Ala Arg Met Glu Val Ser Gln Glu Asp Asp Lys Ala Leu Gln Leu Leu
65   70   75   80

His Asp Ile Arg Glu Gln Ser Arg Lys Leu Gln Glu Ile Lys Glu Gln
            85   90   95

Glu Tyr Gln Ala Gln Val Glu Glu Met Arg Leu Met Met Asn Gln Leu
            100   105   110

Glu Glu Asp Leu Val Ser Ala Arg Arg Arg Ser Asp Leu Tyr Glu Ser
        115   120   125

Glu Leu Arg Glu Ser Arg Leu Ala Ala Glu Glu Phe Lys Arg Lys Ala
    130   135   140

Asn Glu Cys Gln His Lys Leu Met Lys Ala Lys Asp Gln Gly Lys Pro
145   150   155   160

Glu Val Gly Glu Tyr Ser Lys Leu Glu Lys Ile Asn Ala Glu Gln Gln

```
                165                      170                      175
Leu Lys Ile Gln Glu Leu Gln Glu Lys Leu Glu Lys Ala Val Lys Ala
            180                  185                  190

Ser Thr Glu Ala Thr Glu Leu Leu Gln Asn Ile Arg Gln Ala Lys Glu
            195                  200                  205

Arg Ala Glu Arg Glu Leu Glu Lys Leu His Asn Arg Glu Asp Ser Ser
    210                  215                  220

Glu Gly Ile Lys Lys Lys Leu Val Glu Ala Glu Glu Arg Arg His Ser
225                  230                  235                  240

Leu Glu Asn Lys Val Lys Arg Leu Glu Thr Met Glu Arg Arg Glu Asn
            245                  250                  255

Arg Leu Lys Asp Asp Ile Gln Thr Lys Ser Glu Gln Ile Gln Gln Met
            260                  265                  270

Ala Asp Lys Ile Leu Glu Leu Glu Glu Lys His Arg Glu Ala Gln Val
            275                  280                  285

Ser Ala Gln His Leu Glu Val His Leu Lys Gln Lys Glu Gln His Tyr
    290                  295                  300

Glu Glu Lys Ile Lys Val Leu Asp Asn Gln Ile Lys Lys Asp Leu Ala
305                  310                  315                  320

Asp Lys Glu Ser Leu Glu Asn Met Met Gln Arg His Glu Glu Glu Ala
            325                  330                  335

His Glu Lys Gly Lys Ile Leu Ser Glu Gln Lys Ala Met Ile Asn Ala
            340                  345                  350

Met Asp Ser Lys Ile Arg Ser Leu Glu Gln Arg Ile Val Glu Leu Ser
            355                  360                  365

Glu Ala Asn Lys Leu Ala Ala Asn Ser Ser Leu Phe Thr Gln Arg Asn
    370                  375                  380

Met Lys Ala Gln Glu Glu Met Ile Ser Glu Leu Arg Gln Gln Lys Phe
385                  390                  395                  400

Tyr Leu Glu Thr Gln Ala Gly Lys Leu Glu Ala Gln Asn Arg Lys Leu
            405                  410                  415

Glu Glu Gln Leu Glu Lys Ile Ser His Gln Asp His Ser Asp Lys Ser
            420                  425                  430

Arg Leu Leu Glu Leu Glu Thr Arg Leu Arg Glu Val Ser Leu Glu His
            435                  440                  445

Glu Glu Gln Lys Leu Glu Leu Lys Arg Gln Leu Thr Glu Leu Gln Leu
    450                  455                  460

Ser Leu Gln Glu Arg Glu Ser Gln Leu Thr Ala Leu Gln Ala Ala Arg
```

126

Ala Ala Leu Glu Ser Gln Leu Arg Gln Ala Lys Thr Glu Leu Glu Glu
                 485   490   495

Thr Thr Ala Glu Ala Glu Glu Glu Ile Gln Ala Leu Thr Ala His Arg
         500   505   510

Asp Glu Ile Gln Arg Lys Phe Asp Ala Leu Arg Asn Ser Cys Thr Val
         515   520   525

Ile Thr Asp Leu Glu Glu Gln Leu Asn Gln Leu Thr Glu Asp Asn Ala
         530   535   540

Glu Leu Asn Asn Gln Asn Phe Tyr Leu Ser Lys Gln Leu Asp Glu Ala
545   550   555   560

Ser Gly Ala Asn Asp Glu Ile Val Gln Leu Arg Ser Glu Val Asp His
         565   570   575

Leu Arg Arg Glu Ile Thr Glu Arg Glu Met Gln Leu Thr Ser Gln Lys
         580   585   590

Gln Thr Met Glu Ala Leu Lys Thr Thr Cys Thr Met Leu Glu Glu Gln
         595   600   605

Val Leu Asp Leu Glu Ala Leu Asn Asp Glu Leu Leu Glu Lys Glu Arg
         610   615   620 .

Gln Trp Glu Ala Trp Arg Ser Val Leu Gly Asp Glu Lys Ser Gln Phe
625   630   635   640

Glu Cys Arg Val Arg Glu Leu Gln Arg Met Leu Asp Thr Glu Lys Gln
         645   650   655 .

Ser Arg Ala Arg Ala Asp Gln Arg Ile Thr Glu Ser Arg Gln Val Val
         660   . 665   670

Glu Leu Ala Val Lys Glu His Lys Ala Glu Ile Leu Ala Leu Gln Gln
         675   680   685

Ala Leu Lys Glu Gln Lys Leu Lys Ala Glu Ser Leu Ser Asp Lys Leu
         690   695   700

Asn Asp Leu Glu Lys Lys His Ala Met Leu Glu Met Asn Ala Arg Ser
705   710   715   720

Leu Gln Gln Lys Leu Glu Thr Glu Arg Glu Leu Lys Gln Arg Leu Leu
         725   730   735

Glu Glu Gln Ala Lys Leu Gln Gln Gln Met Asp Leu Gln Lys Asn His
         740   745   750

Ile Phe Arg Leu Thr Gln Gly Leu Gln Glu Ala Leu Asp Arg Ala Asp
         755   760   765

Leu Leu Lys Thr Glu Arg Ser Asp Leu Glu Tyr Gln Leu Glu Asn Ile

Gln Val Leu Tyr Ser His Glu Lys Val Lys Met Glu Gly Thr Ile Ser
785   790   795   800

Gln Gln Thr Lys Leu Ile Asp Phe Leu Gln Ala Lys Met Asp Gln Pro
                   805   810   815

Ala Lys Lys Lys Lys Val Pro Leu Gln Tyr Asn Glu Leu Lys Leu Ala
                   820   825   830

Leu Glu Lys Glu Lys Ala Arg Cys Ala Glu Leu Glu Glu Ala Leu Gln
                   835   840   845

Lys Thr Arg Ile Glu Leu Arg Ser Ala Arg Glu Glu Ala Ala His Arg
         850   855   860

Lys Ala Thr Asp His Pro His Pro Ser Thr Pro Ala Thr Ala Arg Gln
865   870   875   880

Gln Ile Ala Met Ser Ala Ile Val Arg Ser Pro Glu His Gln Pro Ser
                   885   890   895

Ala Met Ser Leu Leu Ala Pro Pro Ser Ser Arg Arg Lys Glu Ser Ser
                   900   905   910

Thr Pro Glu Glu Phe Ser Arg Arg Leu Lys Glu Arg Met His His Asn
         915   920   925

Ile Pro His Arg Phe Asn Val Gly Leu Asn Met Arg Ala Thr Lys Cys
         930   935   940

Ala Val Cys Leu Asp Thr Val His Phe Gly Arg Gln Ala Ser Lys Cys
945   950   955   960

Leu Glu Cys Gln Val Met Cys His Pro Lys Cys Ser Thr Cys Leu Pro
                   965   970   975

Ala Thr Cys Gly Leu Pro Ala Glu Tyr Ala Thr His Phe Thr Glu Ala
                   980   985   990

Phe Cys Arg Asp Lys Met Asn Ser Pro Gly Leu Gln Ser Lys Glu Pro
         995   1000   1005

Gly Ser Ser Leu His Leu Glu Gly Trp Met Lys Val Pro Arg Asn Asn
     1010   1015   1020

Lys Arg Gly Gln Gln Gly Trp Asp Arg Lys Tyr Ile Val Leu Glu Gly
1025   1030   1035   1040

Ser Lys Val Leu Ile Tyr Asp Asn Glu Ala Arg Glu Ala Gly Gln Arg
                   1045   1050   1055

Pro Val Glu Glu Phe Glu Leu Cys Leu Pro Asp Gly Asp Val Ser Ile
         1060   1065   1070

His Gly Ala Val Gly Ala Ser Glu Leu Ala Asn Thr Ala Lys Ala Asp

Val Pro Tyr Ile Leu Lys Met Glu Ser His Pro His Thr Thr Cys Trp
  1090   1095   1100

Pro Gly Arg Thr Leu Tyr Leu Leu Ala Pro Ser Phe Pro Asp Lys Gln
1105   1110   1115   1120

Arg Trp Val Thr Ala Leu Glu Ser Val Val Ala Gly Gly Arg Val Ser
               1125   1130   1135

Arg Glu Lys Ala Glu Ala Asp Ala Lys Leu Leu Gly Asn Ser Leu Leu
                1140   1145   1150

Lys Leu Glu Gly Asp Asp Arg Leu Asp Met Asn Cys Thr Leu Pro Phe
          1155   1160   1165

Ser Asp Gln Val Val Leu Val Gly Thr Glu Glu Gly Leu Tyr Ala Leu
  1170   .   1175   1180

Asn Val Leu Lys Asn Ser Leu Thr His Ile Pro Gly Ile Gly Ala Val
1185   1190   1195   1200

Phe Gln Ile Tyr Ile Ile Lys Asp Leu Glu Lys Leu Leu Met Ile Ala
               1205   1210   1215

Gly Glu Glu Arg Ala Leu Cys Leu Val Asp Val Lys Lys Val Lys Gln
          1220   1225   1230

Ser Leu Ala Gln Ser His Leu Pro Ala Gln Pro Asp Val Ser Pro Asn
          1235   1240   1245

Ile Phe Glu Ala Val Lys Gly Cys His Leu Phe Ala Ala Gly Lys Ile
   1250   1255   1260

Glu Asn Ser Leu Cys Ile Cys Ala Ala Met Pro Ser Lys Val Val Ile
1265   1270   1275   1280

Leu Arg Tyr Asn Asp Asn Leu Ser Lys Tyr Cys Ile Arg Lys Glu Ile
               1285   1290   .   1295

Glu Thr Ser Glu Pro Cys Ser Cys Ile His Phe Thr Asn Tyr Ser Ile
          1300   1305   1310

Leu Ile Gly Thr Asn Lys Phe Tyr Glu Ile Asp Met Lys Gln Tyr Thr
   1315   1320   1325

Leu Asp Glu Phe Leu Asp Lys Asn Asp His Ser Leu Ala Pro Ala Val
   1330   1335   1340

Phe Ala Ser Ser Ser Asn Ser Phe Pro Val Ser Ile Val Gln Ala Asn
1345   1350   1355   1360

Ser Ala Gly Gln Arg Glu Glu Tyr Leu Leu Cys Phe His Glu Phe Gly
            1365   1370   1375

Val Phe Val Asp Ser Tyr Gly Arg Arg Ser Arg Thr Asp Asp Leu Lys

Trp Ser Arg Leu Pro Leu Ala Phe Ala Tyr Arg Glu Pro Tyr Leu Phe
         1395   1400   1405

Val Thr His Phe Asn Ser Leu Glu Val Ile Glu Ile Gln Ala Arg Ser
    1410   1415   1420

Ser Leu Gly Ser Pro Ala Arg Ala Tyr Leu Glu Ile Pro Asn Pro Arg
1425   1430   1435   1440

' Tyr Leu Gly Pro Ala Ile Ser Ser Gly Ala Ile Tyr Leu Ala Ser Ser
              1445   1450   1455

Tyr Gln Asp Lys Leu Arg Val Ile Cys Cys Lys Gly Asn Leu Val Lys
         1460   1465   1470

Glu Ser Gly Thr Glu Gln His Arg Val Pro Ser Thr Ser Arg Ser Ser
         1475   1480   1485

Pro Asn Lys Arg Gly Pro Pro Thr Tyr Asn Glu His Ile Thr Lys Arg
    1490   1495   1500

Val Ala Ser Ser Pro Ala Pro Pro Glu Gly Pro Ser His Pro Arg Glu
1505   1510   1515   1520

Pro Ser Thr Pro His Arg Tyr Arg Asp Arg Glu Gly Arg Thr Glu Leu
              1525   1530   1535

Arg Arg Asp Lys Ser Pro Gly Arg Pro Leu Glu Arg Glu Lys Ser Pro
         1540   1545   1550

Gly Arg Met Leu Ser Thr Arg Arg Glu Arg Ser Pro Gly Arg Leu Phe
    1555   1560   1565

Glu Asp Ser Ser Arg Gly Arg Leu Pro Ala Gly Ala Val Arg Thr Pro
    1570   1575   1580

Leu Ser Gln Val Asn Lys Val Trp Asp Gln Ser Ser Val
1585   1590   1595

<210> 42
<211> 1871
<212> PRT
<213> Homo sapiens

<400> 42
Met Pro Ser Val Cys Leu Leu Leu Leu Phe Leu Ala Val Gly Gly
  1   5   10   15

Ala Leu Gly Asn Arg Pro Phe Arg Ala Phe Val Val Thr Asp Thr Thr
              20   25   30

Leu Thr His Leu Ala Val His Arg Val Thr Gly Glu Val Phe Val Gly
         35   40   45

```
Ala Val Asn Arg Val Phe Lys Leu Ala Pro Asn Leu Thr Glu Leu Arg
     50                  55                  60

Ala His Val Thr Gly Pro Val Glu Asp Asn Ala Arg Cys Tyr Pro Pro
 65          70                  75                  80

Pro Ser Met Arg Val Cys Ala His Arg Leu Ala Pro Val Asp Asn Ile
             85                  90                  95

Asn Lys Leu Leu Leu Ile Asp Tyr Ala Ala Arg Arg Leu Val Ala Cys
             100             105             110

Gly Ser Ile Trp Gln Gly Ile Cys Gln Phe Leu Arg Leu Asp Asp Leu
         115             120             125

Phe Lys Leu Gly Glu Pro His His Arg Lys Glu His Tyr Leu Ser Gly
     130             135             140

Ala Gln Glu Pro Asp Ser Met Ala Gly Val Ile Val Glu Gln Gly Gln
145             150             155             160

Gly Pro Ser Lys Leu Phe Val Gly Thr Ala Val Asp Gly Lys Ser Glu
             165             170             175

Tyr Phe Pro Thr Leu Ser Ser Arg Lys Leu Ile Ser Asp Glu Asp Ser
             180             185             190

Ala Asp Met Phe Ser Leu Val Tyr Gln Asp Glu Phe Val Ser Ser Gln
         195             200             205

Ile Lys Ile Pro Ser Asp Thr Leu Ser Leu Tyr Pro Ala Phe Asp Ile
     210             215             220

Tyr Tyr Ile Tyr Gly Phe Val Ser Ala Ser Phe Val Tyr Phe Leu Thr
225             230             235             240

Leu Gln Leu Asp Thr Gln Gln Thr Leu Leu Asp Thr Ala Gly Glu Lys
             245             250             255

Phe Phe Thr Ser Lys Ile Val Arg Met Cys Ala Gly Asp Ser Glu Phe
             260             265             270

Tyr Ser Tyr Val Glu Phe Pro Ile Gly Cys Ser Trp Arg Gly Val Glu
             275             280             285

Tyr Arg Leu Val Gln Ser Ala His Leu Ala Lys Pro Gly Leu Leu Leu
     290             295             300

Ala Gln Ala Leu Gly Val Pro Ala Asp Glu Asp Val Leu Phe Thr Ile
305             310             315             320

Phe Ser Gln Gly Gln Lys Asn Arg Ala Ser Pro Pro Arg Gln Thr Ile
             325             330             335

Leu Cys Leu Phe Thr Leu Ser Asn Ile Asn Ala His Ile Arg Arg Arg
             340             345             350
```

131

```
Ile Gln Ser Cys Tyr Arg Gly Glu Gly Thr Leu Ala Leu Pro Trp Leu
        355             360             365

Leu Asn Lys Glu Leu Pro Cys Ile Asn Thr Pro Met Gln Ile Asn Gly
        370             375             380

Asn Phe Cys Gly Leu Val Leu Asn Gln Pro Leu Gly Gly Leu His Val
385             390             395             400

Ile Glu Gly Leu Pro Leu Leu Ala Asp Ser Thr Asp Gly Met Ala Ser
            405             410             415

Val Ala Ala Tyr Thr Tyr Arg Gln His Ser Val Val Phe Ile Gly Thr
            420             425             430

Arg Ser Gly Ser Leu Lys Lys Val Arg Val Asp Gly Phe Gln Asp Ala
        435             440             445

His Leu Tyr Glu Thr Val Pro Val Val Asp Gly Ser Pro Ile Leu Arg
        450             455             460

Asp Leu Leu Phe Ser Pro Asp His Arg His Ile Tyr Leu Leu Ser Glu
465             470             475             480

Lys Gln Val Ser Gln Leu Pro Val Glu Thr Cys Glu Gln Tyr Gln Ser
            485             490             495

Cys Ala Ala Cys Leu Gly Ser Gly Asp Pro His Cys Gly Trp Cys Val
        500             505             510

Leu Arg His Arg Cys Cys Arg Glu Gly Ala Cys Leu Gly Ala Ser Ala
        515             520             525

Pro His Gly Phe Ala Glu Glu Leu Ser Lys Cys Val Gln Val Arg Val
        530             535             540

Arg Pro Asn Asn Val Ser Val Thr Ser Pro Gly Val Gln Leu Thr Val
545             550             555             560

Thr Leu His Asn Val Pro Asp Leu Ser Ala Gly Val Ser Cys Ala Phe
            565             570             575

Glu Ala Ala Ala Glu Asn Glu Ala Val Leu Leu Pro Ser Gly Glu Leu
        580             585             590

Leu Cys Pro Ser Pro Ser Leu Gln Glu Leu Arg Ala Leu Thr Arg Gly
        595             600             605

His Gly Ala Thr Arg Thr Val Arg Leu Gln Leu Leu Ser Lys Glu Thr
        610             615             620

Gly Val Arg Phe Ala Gly Ala Asp Phe Val Phe Tyr Asn Cys Ser Val
625             630             635             640

Leu Gln Ser Cys Met Ser Cys Val Gly Ser Pro Tyr Pro Cys His Trp
            645             650             655
```

132

```
Cys Lys Tyr Arg His Thr Cys Thr Ser Arg Pro His Glu Cys Ser Phe
            660             665             670

Gln Glu Gly Arg Val His Ser Pro Glu Gly Cys Pro Glu Ile Leu Pro
            675             680             685

Ser Gly Asp Leu Leu Ile Pro Val Gly Val Met Gln Pro Leu Thr Leu
    690             695             700

Arg Ala Lys Asn Leu Pro Gln Pro Gln Ser Gly Gln Lys Asn Tyr Glu
705             710             715             720

Cys Val Val Arg Val Gln Gly Arg Gln Arg Val Pro Ala Val Arg
            725             730             735

Phe Asn Ser Ser Ser Val Gln Cys Gln Asn Ala Ser Tyr Ser Tyr Glu
            740             745             750

Gly Asp Glu His Gly Asp Thr Glu Leu Asp Phe Ser Val Val Trp Asp
            755             760             765

Gly Asp Phe Pro Ile Asp Lys Pro Pro Ser Phe Arg Ala Leu Leu Tyr
    770             775             780

Lys Cys Trp Ala Gln Arg Pro Ser Cys Gly Leu Cys Leu Lys Ala Asp
785             790             795             800

Pro Arg Phe Asn Cys Gly Trp Cys Ile Ser Glu His Arg Cys Gln Leu
            805             810             815

Arg Thr His Cys Pro Ala Pro Lys Thr Asn Trp Met His Leu Ser Gln
            820             825             830

Lys Gly Thr Arg Cys Ser His Pro Arg Ile Thr Gln Ile His Pro Leu
    835             840             845

Val Gly Pro Lys Glu Gly Gly Thr Arg Val Thr Ile Val Gly Asp Asn
    850             855             860

Leu Gly Leu Leu Ser Arg Glu Val Gly Leu Arg Val Ala Gly Val Arg
865             870             875             880

Cys Asn Ser Ile Pro Ala Glu Tyr Ile Ser Ala Glu Arg Ile Val Cys
            885             890             895

Glu Met Glu Glu Ser Leu Val Pro Ser Pro Pro Gly Pro Val Glu
            900             905             910

Leu Cys Val Gly Asp Cys Ser Ala Asp Phe Arg Thr Gln Ser Glu Gln
            915             920             925

Val Tyr Ser Phe Val Thr Pro Thr Phe Asp Gln Val Ser Pro Ser Arg
    930             935             940

Gly Pro Ala Ser Gly Gly Thr Arg Leu Thr Ile Ser Gly Ser Ser Leu
945             950             955             960
```

```
Asp Ala Gly Ser Arg Val Thr Val Thr Val Arg Asp Ser Glu Cys Gln
            965               970               975

Phe Val Arg Arg Asp Ala Lys Ala Ile Val Cys Ile Ser Pro Leu Ser
            980               985               990

Thr Leu Gly Pro Ser Gln Ala Pro Ile Thr Leu Ala Ile Asp Arg Ala
            995              1000              1005

Asn Ile Ser Ser Pro Gly Leu Ile Tyr Thr Tyr Thr Gln Asp Pro Thr
     1010              1015              1020

Val Thr Arg Leu Glu Pro Thr Trp Ser Ile Ile Asn Gly Ser Thr Ala
1025              1030              1035              1040

Ile Thr Val Ser Gly Thr His Leu Leu Thr Val Gln Glu Pro Arg Val
            1045              1050              1055

Arg Ala Lys Tyr Arg Gly Ile Glu Thr Thr Asn Thr Cys Gln Val Ile
            1060              1065              1070

Asn Asp Thr Ala Met Leu Cys Lys Ala Pro Gly Ile Phe Leu Gly Arg
            1075              1080              1085

Pro Gln Pro Arg Ala Gln Gly Glu His Pro Asp Glu Phe Gly Phe Leu
     1090              1095              1100

Leu Asp His Val Gln Thr Ala Arg Ser Leu Asn Arg Ser Ser Phe Thr
1105              1110              1115              1120

Tyr Tyr Pro Asp Pro Ser Phe Glu Pro Leu Gly Pro Ser Gly Val Leu
            1125              1130              1135

Asp Val Lys Pro Gly Ser His Val Val Leu Lys Gly Lys Asn Leu Ile
            1140              1145              1150

Pro Ala Ala Ala Gly Ser Ser Arg Leu Asn Tyr Thr Val Leu Ile Gly
            1155              1160              1165

Gly Gln Pro Cys Ser Leu Thr Val Ser Asp Thr Gln Leu Leu Cys Asp
     1170              1175              1180

Ser Pro Ser Gln Thr Gly Arg Gln Pro Val Met Val Leu Val Gly Gly
1185              1190              1195              1200

Leu Glu Phe Trp Leu Gly Thr Leu His Ile Ser Ala Glu Arg Ala Leu
            1205              1210              1215

Thr Leu Pro Ala Met Met Gly Leu Ala Ala Gly Gly Gly Leu Leu Leu
            1220              1225              1230

Leu Ala Ile Thr Ala Val Leu Val Ala Tyr Lys Arg Lys Thr Gln Asp
            1235              1240              1245

Ala Asp Arg Thr Leu Lys Arg Leu Gln Leu Gln Met Asp Asn Leu Glu
     1250              1255              1260
```

134

```
Ser Arg Val Ala Leu Glu Cys Lys Glu Ala Phe Ala Glu Leu Gln Thr
1265                1270                1275                1280

Asp Ile Asn Glu Leu Thr Asn His Met Asp Glu Val Gln Ile Pro Phe
            1285                1290                1295

Leu Asp Tyr Arg Thr Tyr Ala Val Arg Val Leu Phe Pro Gly Ile Glu
        1300                1305                1310

Ala His Pro Val Leu Lys Glu Leu Asp Thr Pro Pro Asn Val Glu Lys
        1315                1320                1325

Ala Leu Arg Leu Phe Gly Gln Leu Leu His Ser Arg Ala Phe Val Leu
    1330                1335                1340

Thr Phe Ile His Thr Leu Glu Ala Gln Ser Ser Phe Ser Met Arg Asp
1345                1350                1355                1360

Arg Gly Thr Val Ala Ser Leu Thr Met Val Ala Leu Gln Ser Arg Leu
            1365                1370                1375

Asp Tyr Ala Thr Gly Leu Leu Lys Gln Leu Leu Ala Asp Leu Ile Glu
        1380                1385                1390

Lys Asn Leu Glu Ser Lys Asn His Pro Lys Leu Leu Leu Arg Arg Thr
        1395                1400                1405

Glu Ser Val Ala Glu Lys Met Leu Thr Asn Trp Phe Thr Phe Leu Leu
    1410                1415                1420

His Lys Phe Leu Lys Glu Cys Ala Gly Glu Pro Leu Phe Leu Leu Tyr
1425                1430                1435                1440

Cys Ala Ile Lys Gln Gln Met Glu Lys Gly Pro Ile Asp Ala Ile Thr
            1445                1450                1455

Gly Glu Ala Arg Tyr Ser Leu Ser Glu Asp Lys Leu Ile Arg Gln Gln
        1460                1465                1470

Ile Asp Tyr Lys Thr Leu Thr Leu His Cys Val Cys Pro Glu Asn Glu
        1475                1480                1485

Gly Ser Ala Gln Val Pro Val Lys Val Leu Asn Cys Asp Ser Ile Thr
    1490                1495                1500

Gln Ala Lys Asp Lys Leu Leu Asp Thr Val Tyr Lys Gly Ile Pro Tyr
1505                1510                1515                1520

Ser Gln Arg Pro Lys Ala Glu Asp Met Asp Leu Glu Trp Arg Gln Gly
        1525                1530                1535

Arg Met Thr Arg Ile Ile Leu Gln Asp Glu Asp Val Thr Thr Lys Ile
        1540                1545                1550

Glu Cys Asp Trp Lys Arg Leu Asn Ser Leu Ala His Tyr Gln Val Thr
    1555                1560                1565
```

135

```
Asp Gly Ser Leu Val Ala Leu Val Pro Lys Gln Val Ser Ala Tyr Asn
    1570               1575              1580

Met Ala Asn Ser Phe Thr Phe Thr Arg Ser Leu Ser Arg Tyr Glu Ser
1585               1590              1595              1600

Leu Leu Arg Thr Ala Ser Ser Pro Asp Ser Leu Arg Ser Arg Ala Pro
               1605              1610              1615

Met Ile Thr Pro Asp Gln Glu Thr Gly Thr Lys Leu Trp His Leu Val
               1620              1625              1630

Lys Asn His Asp His Ala Asp His Arg Glu Gly Asp Arg Gly Ser Lys
        1635              1640              1645

Met Val Ser Glu Ile Tyr Leu Thr Arg Leu Leu Ala Thr Lys Gly Thr
    1650              1655              1660

Leu Gln Lys Phe Val Asp Asp Leu Phe Glu Thr Val Phe Ser Thr Ala
1665              1670              1675              1680

His Arg Gly Ser Ala Leu Pro Leu Ala Ile Lys Tyr Met Phe Asp Phe
               1685              1690              1695

Leu Asp Glu Gln Ala Asp Gln Arg Gln Ile Ser Asp Pro Asp Val Arg
               1700              1705              1710

His Thr Trp Lys Ser Asn Cys Leu Pro Leu Arg Phe Trp Val Asn Val
        1715              1720              1725

Ile Lys Asn Pro Gln Phe Val Phe Asp Ile His Lys Asn Ser Ile Thr
    1730              1735              1740

Asp Ala Cys Leu Ser Val Val Ala Gln Thr Phe Met Asp Ser Cys Ser
1745              1750              1755              1760

Thr Ser Glu His Arg Leu Gly Lys Asp Ser Pro Ser Asn Lys Leu Leu
               1765              1770              1775

Tyr Ala Lys Asp Ile Pro Asn Tyr Lys Ser Trp Val Glu Arg Tyr Tyr
        1780              1785              1790

Arg Asp Ile Ala Lys Met Ala Ser Ile Ser Asp Gln Asp Met Asp Ala
        1795              1800              1805

Tyr Leu Val Glu Gln Ser Arg Leu His Ala Ser Asp Phe Ser Val Leu
    1810              1815              1820

Ser Ala Leu Asn Glu Leu Tyr Phe Tyr Val Thr Lys Tyr Arg Gln Glu
1825              1830              1835              1840

Ile Leu Thr Ala Leu Asp Arg Asp Ala Ser Cys Arg Lys His Lys Leu
        1845              1850              1855

Arg Gln Lys Leu Glu Gln Ile Ile Ser Leu Val Ser Ser Asp Ser
        1860              1865              1870
```

<210> 43
<211> 1963
<212> PRT
<213> Homo sapiens

<400> 43
Gly Phe Gly Arg Leu Pro Asp Ser Glu Leu Arg Ala Gly Arg Gly Ala
 1   5   10   15

Ser Arg Arg Pro Gln Gln Pro Ala Ala Ala Glu Val Asp Arg Ala Gly
                20   25   30

Thr Glu Gly Gln Thr Asp Val Ala Glu Leu Glu Ser Cys Glu Gly Gln
            35   40   45

Pro Gly Lys Val Glu Gln Met Ser Thr His Arg Ser Arg Leu Leu Thr
        50   55   60

Ala Ala Pro Leu Ser Met Glu Gln Arg Arg Pro Trp Pro Arg Ala Leu
65   70   75   80

Glu Val Asp Ser Arg Ser Val Val Leu Leu Ser Val Val Trp Val Leu
                85   90   95

Leu Ala Pro Pro Ala Ala Gly Met Pro Gln Phe Ser Thr Phe His Ser
            100   105   110

Glu Asn Arg Asp Trp Thr Phe Asn His Leu Thr Val His Gln Gly Thr
        115   120   125

Gly Ala Val Tyr Val Gly Ala Ile Asn Arg Val Tyr Lys Leu Thr Gly
        130   135   140

Asn Leu Thr Ile Gln Val Ala His Lys Thr Gly Pro Glu Glu Asp Asn
145   150   155   160

Lys Ser Cys Tyr Pro Pro Leu Ile Val Gln Pro Cys Ser Glu Val Leu
            165   170   175

Thr Leu Thr Asn Asn Val Asn Lys Leu Leu Ile Ile Asp Tyr Ser Glu
        180   185   190

Asn Arg Leu Leu Ala Cys Gly Ser Leu Tyr Gln Gly Val Cys Lys Leu
        195   200   205

Leu Arg Leu Asp Asp Leu Phe Ile Leu Val Glu Pro Ser His Lys Lys
    210   215   220

Glu His Tyr Leu Ser Ser Val Asn Lys Thr Gly Thr Met Tyr Gly Val
225   230   235   240

Ile Val Arg Ser Glu Gly Glu Asp Gly Lys Leu Phe Ile Gly Thr Ala
            245   250   255

Val Asp Gly Lys Gln Asp Tyr Phe Pro Thr Leu Ser Ser Arg Lys Leu
        260   265   270

137

```
Pro Arg Asp Pro Glu Ser Ser Ala Met Leu Asp Tyr Glu Leu His Ser
    275                 280                 285

Asp Phe Val Ser Ser Leu Ile Lys Ile Pro Ser Asp Thr Leu Ala Leu
    290                 295                 300

Val Ser His Phe Asp Ile Phe Tyr Ile Tyr Gly Phe Ala Ser Gly Gly
305                 310                 315                 320

Phe Val Tyr Phe Leu Thr Val Gln Pro Glu Thr Pro Glu Gly Val Ala
            325                 330                 335

Ile Asn Ser Ala Gly Asp Leu Phe Tyr Thr Ser Arg Ile Val Arg Leu
            340                 345                 350

Cys Lys Asp Asp Pro Lys Phe His Ser Tyr Val Ser Leu Pro Phe Gly
            355                 360                 365

Cys Thr Arg Ala Gly Val Glu Tyr Arg Leu Leu Gln Ala Ala Tyr Leu
    370                 375                 380

Ala Lys Pro Gly Asp Ser Leu Ala Gln Ala Phe Asn Ile Thr Ser Gln
385                 390                 395                 400

Asp Asp Val Leu Phe Ala Ile Phe Ser Lys Gly Gln Lys Gln Tyr His
            405                 410                 415

His Pro Pro Asp Asp Ser Ala Leu Cys Ala Phe Pro Ile Arg Ala Ile
    420                 425                 430

Asn Leu Gln Ile Lys Gly Arg Leu Gln Ser Cys Tyr Gln Gly Glu Gly
    435                 440                 445

Asn Leu Glu Leu Asn Trp Leu Leu Gly Lys Asp Val Gln Cys Thr Lys
    450                 455                 460

Ala Pro Val Pro Ile Asp Asp Asn Phe Cys Gly Leu Asp Ile Asn Gln
465                 470           .     475                 480

Pro Leu Gly Gly Ser Thr Pro Val Glu Gly Leu Thr Leu Tyr Thr Thr
            485                 490                 495

Ser Arg Asp Arg Met Thr Ser Val Ala Ser Tyr Val Tyr Asn Gly Tyr
            500                 505                 510

Ser Val Val Phe Val Gly Thr Lys Ser Gly Lys Leu Lys Lys Ile Arg
            515                 520                 525

Ala Asp Gly Pro Pro His Gly Gly Val Gln Tyr Glu Met Val Ser Val
    530                 535                 540

Leu Lys Asp Gly Ser Pro Ile Leu Arg Asp Met Ala Phe Ser Ile Asp
545                 550                 555                 560

Gln Arg Tyr Leu Tyr Val Met Ser Glu Arg Gln Val Thr Arg Val Pro
            565                 570                 575
```

138

```
Val Glu Ser Cys Glu Gln Tyr Thr Thr Cys Gly Glu Cys Leu Ser Ser
        580                 585                 590

Gly Asp Pro His Cys Gly Trp Cys Ala Leu His Asn Met Cys Ser Arg
        595                 600                 605

Arg Asp Lys Cys Gln Gln Ala Trp Glu Pro Asn Arg Phe Ala Ala Ser
    610                 615                 620

Ile Ser Gln Cys Val Ser Leu Ala Val His Pro Ser Ser Ile Ser Val
625                 630                 635                 640

Ser Glu His Ser Arg Leu Leu Ser Leu Val Val Ser Asp Ala Pro Asp
            645                 650                 655

Leu Ser Ala Gly Ile Ala Cys Ala Phe Gly Asn Leu Thr Glu Val Glu
            660                 665                 670

Gly Gln Val Ser Gly Ser Gln Val Ile Cys Ile Ser Pro Gly Pro Lys
            675                 680                 685

Asp Val Pro Val Ile Pro Leu Asp Gln Asp Trp Phe Gly Leu Glu Leu
    690                 695                 700

Gln Leu Arg Ser Lys Glu Thr Gly Lys Ile Phe Val Ser Thr Glu Phe
705                 710                 715                 720

Lys Phe Tyr Asn Cys Ser Ala His Gln Leu Cys Leu Ser Cys Val Asn
            725                 730                 735

Ser Ala Phe Arg Cys His Trp Cys Lys Tyr Arg Asn Leu Cys Thr His
            740                 745                 750

Asp Pro Thr Thr Cys Ser Phe Gln Glu Gly Arg Ile Asn Ile Ser Glu
    755                 760                 765

Asp Cys Pro Gln Leu Val Pro Thr Glu Glu Ile Leu Ile Pro Val Gly
    770                 775                 780

Glu Val Lys Pro Ile Thr Leu Lys Ala Arg Asn Leu Pro Gln Pro Gln
785                 790                 795                 800

Ser Gly Gln Arg Gly Tyr Glu Cys Val Leu Asn Ile Gln Gly Ala Ile
            805                 810                 815

His Arg Val Pro Ala Leu Arg Phe Asn Ser Ser Ser Val Gln Cys Gln
            820                 825                 830

Asn Ser Ser Tyr Gln Tyr Asp Gly Met Asp Ile Ser Asn Leu Ala Val
            835                 840                 845

Asp Phe Ala Val Val Trp Asn Gly Asn Phe Ile Ile Asp Asn Pro Gln
    850                 855                 860

Asp Leu Lys Val His Leu Tyr Lys Cys Ala Ala Gln Arg Glu Ser Cys
865                 870                 875                 880
```

Gly Leu Cys Leu Lys Ala Asp Arg Lys Phe Glu Cys Gly Trp Cys Ser
              885   890   895

Gly Glu Arg Arg Cys Thr Leu His Gln His Cys Thr Ser Pro Ser Ser
              900   905   910

Pro Trp Leu Asp Trp Ser Ser His Asn Val Lys Cys Ser Asn Pro Gln
              915   920   925

Ile Thr Glu Ile Leu Thr Val Ser Gly Pro Pro Glu Gly Gly Thr Arg
      930   935   940

Val Thr Ile His Gly Val Asn Leu Gly Leu Asp Phe Ser Glu Ile Ala
945   950   955   960

His His Val Gln Val Ala Gly Val Pro Cys Thr Pro Leu Pro Gly Glu
              965   970   975

Tyr Ile Ile Ala Glu Gln Ile Val Cys Glu Met Gly His Ala Leu Val
              980   985   990

Gly Thr Thr Ser Gly Pro Val Arg Leu Cys Ile Gly Glu Cys Lys Pro
      995   1000   1005

Glu Phe Met Thr Lys Ser His Gln Gln Tyr Thr Phe Val Asn Pro Ser
    1010   1015   1020

Val Leu Ser Leu Asn Pro Ile Arg Gly Pro Glu Ser Gly Gly Thr Met
1025   1030   1035   1040

Val Thr Ile Thr Gly His Tyr Leu Gly Ala Gly Ser Ser Val Ala Val
              1045   1050   1055

Tyr Leu Gly Asn Gln Thr Cys Glu Phe Tyr Gly Arg Ser Met Ser Glu
              1060   1065   1070

Ile Val Cys Val Ser Pro Pro Ser Ser Asn Gly Leu Gly Pro Val Pro
      1075   1080   1085

Val Ser Val Ser Val Asp Arg Ala His Val Asp Ser Asn Leu Gln Phe
    1090   1095   1100

Glu Tyr Ile Asp Asp Pro Arg Val Gln Arg Ile Glu Pro Glu Trp Ser
1105   1110   1115   1120

Ile Ala Ser Gly His Thr Pro Leu Thr Ile Thr Gly Phe Asn Leu Asp
              1125   1130   1135

Val Ile Gln Glu Pro Arg Ile Arg Val Lys Phe Asn Gly Lys Glu Ser
              1140   1145   1150

Val Asn Val Cys Lys Val Val Asn Thr Thr Thr Leu Thr Cys Leu Ala
      1155   1160   1165

Pro Ser Leu Thr Thr Asp Tyr Arg Pro Gly Leu Asp Thr Val Glu Arg
      1170   1175   1180

140

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Pro Asp Glu Phe Gly Phe Val Phe Asn Asn Val Gln Ser Leu Leu Ile
1185           1190           1195               1200

Tyr Asn Asp Thr Lys Phe Ile Tyr Tyr Pro Asn Pro Thr Phe Glu Leu
            1205           1210           1215

Leu Ser Pro Thr Gly Val Leu Asp Gln Lys Pro Gly Ser Pro Ile Ile
        1220           1225           1230

Leu Lys Gly Lys Asn Leu Cys Pro Pro Ala Ser Gly Gly Ala Lys Leu
        1235           1240           1245

Asn Tyr Thr Val Leu Ile Gly Glu Thr Pro Cys Ala Val Thr Val Ser
    1250           1255           1260

Glu Thr Gln Leu Leu Cys Glu Pro Pro Asn Leu Thr Gly Gln His Lys
1265           1270           1275               1280

Val Met Val His Val Gly Gly Met Val Phe Ser Pro Gly Ser Val Ser
            1285           1290           1295

Val Ile Ser Asp Ser Leu Leu Thr Leu Pro Ala Ile Val Ser Ile Ala
        1300           1305           1310

Ala Gly Gly Ser Leu Leu Leu Ile Ile Val Ile Ile Val Leu Ile Ala
    1315           1320           1325

Tyr Lys Arg Lys Ser Arg Glu Asn Asp Leu Thr Leu Lys Arg Leu Gln
    1330           1335           1340

Met Gln Met Asp Asn Leu Glu Ser Arg Val Ala Leu Glu Cys Lys Glu
1345           1350           1355               1360

Ala Phe Ala Glu Leu Gln Thr Asp Ile Asn Glu Leu Thr Ser Asp Leu
        1365           1370           1375

Asp Arg Ser Gly Ile Pro Tyr Leu Asp Tyr Arg Thr Tyr Ala Met Arg
        1380           1385           1390

Val Leu Phe Pro Gly Ile Glu Asp His Pro Val Leu Arg Glu Leu Glu
    1395         .     1400           1405

Val Gln Gly Asn Gly Gln Gln His Val Glu Lys Ala Leu Lys Leu Phe
    1410           1415           1420

Ala Gln Leu Ile Asn Asn Lys Val Phe Leu Leu Thr Phe Ile Arg Thr
1425           1430           1435               1440

Leu Glu Leu Gln Arg Ser Phe Ser Met Arg Asp Arg Gly Asn Val Ala
            1445           1450           1455

Ser Leu Ile Met Thr Gly Leu Gln Gly Arg Leu Glu Tyr Ala Thr Asp
        1460           1465           1470

Val Leu Lys Gln Leu Leu Ser Asp Leu Ile Asp Lys Asn Leu Glu Asn
    1475           1480           1485

                              141
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Lys Asn His Pro Lys Leu Leu Leu Arg Arg Thr Glu Ser Val Ala Glu
    1490            1495            1500

Lys Met Leu Thr Asn Trp Phe Ala Phe Leu Leu His Lys Phe Leu Lys
1505            1510            1515            1520

Glu Cys Ala Gly Glu Pro Leu Phe Met Leu Tyr Cys Ala Ile Lys Gln
            1525            1530            1535

Gln Met Glu Lys Gly Pro Ile Asp Ala Ile Thr Gly Glu Ala Arg Tyr
        1540            1545            1550

Ser Leu Ser Glu Asp Lys Leu Ile Arg Gln Gln Ile Glu Tyr Lys Thr
        1555            1560            1565

Leu Ile Leu Asn Cys Val Asn Pro Asp Asn Glu Asn Ser Pro Glu Ile
    1570            1575            1580

Pro Val Lys Val Leu Asn Cys Asp Thr Ile Thr Gln Val Lys Glu Lys
1585            1590            1595            1600

Ile Leu Asp Ala Val Tyr Lys Asn Val Pro Tyr Ser Gln Arg Pro Arg
            1605            1610            1615

Ala Val Asp Met Asp Leu Glu Trp Arg Gln Gly Arg Ile Ala Arg Val
        1620            1625            1630

Val Leu Gln Asp Glu Asp Ile Thr Thr Lys Ile Glu Gly Asp Trp Lys
        1635            1640            1645

Arg Leu Asn Thr Leu Met His Tyr Gln Val Ser Asp Arg Ser Val Val
    1650            1655            1660

Ala Leu Val Pro Lys Gln Thr Ser Ser Tyr Asn Ile Pro Ala Ser Ala
1665            1670            1675            1680

Ser Ile Ser Arg Thr Ser Ile Ser Arg Tyr Asp Ser Ser Phe Arg Tyr
            1685            1690            1695

Thr Gly Ser Pro Asp Ser Leu Arg Ser Arg Ala Pro Met Ile Thr Pro
        1700            1705            1710

Asp Leu Glu Ser Gly Val Lys Val Trp His Leu Val Lys Asn His Asp
        1715            1720            1725

His Gly Asp Gln Lys Glu Gly Asp Arg Gly Ser Lys Met Val Ser Glu
    1730            1735            1740

Ile Tyr Leu Thr Arg Leu Leu Ala Thr Lys Gly Thr Leu Gln Lys Phe
1745            1750            1755            1760

Val Asp Asp Leu Phe Glu Thr Leu Phe Ser Thr Val His Arg Gly Ser
        1765            1770            1775

Ala Leu Pro Leu Ala Ile Lys Tyr Met Phe Asp Phe Leu Asp Glu Gln
        1780            1785            1790
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Ala Asp Arg His Ser Ile His Asp Thr Asp Val Arg His Thr Trp Lys
        1795   1800   1805

Ser Asn Cys Leu Pro Leu Arg Phe Trp Val Asn Val Ile Lys Asn Pro
     1810   1815   1820

Gln Phe Val Phe Asp Ile His Lys Gly Ser Ile Thr Asp Ala Cys Leu
1825   1830   1835   1840

Ser Val Val Ala Gln Thr Phe Met Asp Ser Cys Ser Thr Ser Glu His
             1845   1850   1855

Arg Leu Gly Lys Asp Ser Pro Ser Asn Lys Leu Leu Tyr Ala Lys Asp
             1860   1865   1870

Ile Pro Ser Tyr Lys Ser Trp Val Glu Arg Tyr Tyr Ala Asp Ile Ala
        1875   1880   1885

Lys Leu Pro Ala Ile Ser Asp Gln Asp Met Asn Ala Tyr Leu Ala Glu
     1890   1895   1900

Gln Ser Arg Leu His Ala Val Glu Phe Asn Met Leu Ser Ala Leu Asn
1905   1910   1915   1920

Glu Ile Tyr Ser Tyr Val Ser Lys Tyr Ser Glu Glu Leu Ile Gly Ala
             1925   1930   1935

Leu Glu Gln Asp Glu Gln Ala Arg Arg Gln Arg Leu Ala Tyr Lys Val
             1940   1945   1950

Glu Gln Leu Ile Asn Ala Met Ser Ile Glu Ser
        1955   1960

<210> 44
<211> 1905
<212> PRT
<213> Xenopus laevis

<400> 44
Met Leu Leu His Ala Glu Arg Pro Leu Pro Phe His Leu Trp Thr Phe
    1   5   10   15

Leu Val Leu Leu Gly Ser Trp Ile Ala Thr Gly Asp Gly Ser Pro Lys
                 20   25   30

Asp Phe Arg Thr Phe Thr Gly Ser Asp Trp Ser Leu Thr His Leu Val
             35   40   45

Val His Asn Lys Thr Gly Glu Val Tyr Val Gly Ala Ile Asn Arg Ile
    50   55   60

Tyr Lys Leu Ser Asn Asn Leu Thr Leu Leu Arg Thr His Val Thr Gly
    65   70   75   80

Pro Val Glu Asp Asn Glu Lys Cys Tyr Pro Pro Pro Ser Val Gln Ser

Cys Pro His Gly Leu Ile Thr Thr Asn Asn Val Asn Lys Leu Leu Leu
            100   105   110

Ile Asp Tyr Ser Asp Asn Arg Leu Ile Ala Cys Gly Ser Ala Ser Gln
            115   120   125

Gly Ile Cys Gln Phe Leu Arg Leu Asp Asp Leu Phe Lys Leu Gly Glu
    130   135   140

Pro His His Arg Lys Glu His Tyr Leu Ser Ser Val Asn Glu Ser Gly
145   150   155   160

Thr Met Ser Gly Val Ile Ile Glu Val Pro Asn Gly Gln Asn Lys Leu
            165   170   175

Phe Val Gly Thr Pro Ile Asp Gly Lys Ser Glu Tyr Phe Pro Thr Leu
            180   185   190

Ser Ser Arg Lys Leu Leu Gly Asn Glu Glu Asn Ala Glu Met Phe Gly
    195   200   205

Phe Val Tyr Gln Asp Glu Phe Val Ser Ser Gln Leu Lys Ile Pro Ser
    210   215   220

Asp Thr Leu Ser Lys Phe Pro Thr Phe Asp Ile Tyr Tyr Val Tyr Ser
225   230   235   240

Phe Ser Ser Glu Gln Phe Val Tyr Tyr Leu Thr Leu Gln Leu Asp Thr
            245   250   255

Gln Leu Thr Ser Pro Asp Ser Thr Gly Glu Gln Phe Phe Thr Ser Lys
            260   265   270

Ile Val Arg Leu Cys Val Asp Asp Pro Lys Phe Tyr Ser Tyr Val Glu
            275   280   285

Phe Pro Ile Gly Cys Met Lys Asp Gly Val Glu Tyr Arg Leu Ile Gln
    290   295   300

Asp Ala Tyr Leu Ser Lys Pro Gly Lys Arg Leu Ala Lys Glu Leu Gly
305   310   315   320

Ile Ser Glu Arg Glu Asp Ile Leu Phe Thr Val Phe Ser Gln Gly Gln
            325   330   335

Lys Asn Arg Ile Lys Pro Pro Lys Glu Ser Val Leu Cys Leu Phe Thr
            340   345   350

Leu Lys Lys Ile Lys Asp Lys Ile Lys Glu Arg Ile Gln Ser Cys Tyr
    355   360   365

Arg Gly Asp Gly Lys Leu Ser Leu Pro Trp Leu Leu Asn Lys Glu Leu
    370   375   380

Gly Cys Ile Asn Ser Pro Leu Gln Ile Asp Asp Asn Phe Cys Gly Gln

Asp Phe Asn Gln Pro Leu Gly Gly Thr Val Thr Ile Glu Gly Thr Pro
                405   410   415

Leu Phe Leu Asp Lys Glu Asp Gly Met Thr Ser Val Ala Ala Tyr Asp
                420   425   430

Tyr Arg Gly His Thr Val Val Phe Ala Gly Thr Arg Ser Gly Arg Val
                435   440   445

Lys Lys Ile Leu Val Asp Leu Ser Ala Ser Ser Ser His Leu Val Gln
        450   455   460

Gln Tyr Glu Asn Val Val Val His Glu Gly Asn Ala Ile Leu Arg Asp
465   470   475   480

Leu Val Leu Ser Pro Asp Arg Gln Tyr Ile Tyr Ala Met Thr Glu Lys
                485   490   495

Gln Val Thr Arg Val Pro Val Glu Ser Cys Glu Gln Tyr Glu Ser Cys
                500   505   510

Asp Thr Cys Leu Gly Ser Arg Asp Pro His Cys Gly Trp Cys Val Leu
                515   520   525

His Asn Met Cys Ser Arg Lys Asp Lys Cys Glu Arg Ala Asp Glu Leu
        530   535   540

His Arg Phe Thr Ser Asp Gln Arg Gln Cys Val Gln Leu Thr Val His
545   550   555   560

Pro Lys Asn Ile Ser Val Thr Val Ser Glu Val Pro Met Val Leu Gln
                565   570   575

Ala Trp Asn Val Pro Asp Leu Ser Ala Gly Val Asn Cys Ser Phe Glu
                580   585   590

Asp Phe Thr Glu Met Glu Gly Arg Ile Leu Asp Gly Lys Ile Tyr Cys
                595   600   605

Thr Ser Pro Ser Ala Lys Glu Val Ile Pro Ile Thr Arg Gly His Gly
        610   615   620

Asp Lys Arg Val Val Lys Leu Tyr Leu Lys Ser Lys Glu Thr Gly Lys
625   630   635   640

Lys Phe Ala Ser Val Asp Phe Val Phe Tyr Asn Cys Ser Val His Gln
                645   650   655

Ser Cys Leu Ser Cys Val Asn Gly Ser Phe Pro Cys His Trp Cys Lys
                660   665   670

Tyr Arg His Val Cys Thr His Asn Ala Ala Asp Cys Ser Phe Gln Glu
        675   680   685

Gly Arg Val Asn Met Ser Glu Asp Cys Pro Gln Ile Leu Pro Ser Ser

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Gln Ile Tyr Ile Pro Val Gly Val Val Lys Pro Ile Thr Leu Thr Ala
705                     710                 715                 720

Lys Asn Leu Pro Gln Pro Gln Ser Gly Gln Arg Asn Tyr Glu Cys Ile
                725             730                 735

Phe His Ile Pro Gly Ser Val Thr Arg Val Thr Ala Leu Arg Phe Asn
                740             745                 750

Ser Thr Ser Ile Gln Cys Gln Asn Thr Ser Tyr Asn Tyr Glu Gly Asn
            755             760                 765

Asp Ile Ser Asp Leu Pro Val Asn Leu Ser Val Val Trp Asn Gly His
            770             775             780

Phe Val Ile Asp Asn Pro Gln Asn Ile Gln Ala His Leu Tyr Lys Cys
785                 790                 795                 800

Ser Ala Leu Arg Glu Ser Cys Gly Leu Cys Leu Lys Ser Asp Arg Arg
                805                 810                 815

Phe Glu Cys Gly Trp Cys Val Ser Glu Lys Lys Cys Thr Leu Arg Gln
                820                 825                 830

Asn Cys Pro Thr Leu Glu Asn Pro Trp Met His Ala Ser Thr Ala Asn
                835                 840                 845

Ser Arg Cys Thr Asp Pro Lys Ile Thr Lys Leu Phe Pro Glu Thr Gly
            850                 855                 860

Pro Arg Gln Gly Gly Thr Arg Leu Thr Ile Thr Gly Glu Asn Leu Gly
865                 870                 875                 880

Leu Arg Phe Glu Asp Ile Arg Phe Gly Val Arg Val Gly His Val Met
                885                 890                 895

Cys Val Pro Val Glu Ser Glu Tyr Ile Ser Ala Glu Gln Ile Val Cys
                900                 905                 910

Glu Ile Asn Asp Ala Gly Arg Thr Arg Val His Glu Ala Gln Val Glu
            915                 920                 925

Val Cys Val Lys Asp Cys Ser Gln Asp Tyr Arg Ala Ile Ser Pro Lys
    930                 935                 940

Ser Phe Thr Phe Val Leu Pro Ser Phe Asn Arg Val Thr Pro Ser Arg
945                 950                 955                 960

Gly Pro Leu Ser Gly Gly Thr Trp Ile Ser Ile Glu Gly Asn Tyr Leu
                965                 970                 975

Asn Ala Gly Ser Asp Val Ser Val Ala Ile Gly Gly Arg Pro Cys Met
                980                 985                 990

Phe Ser Trp Arg Thr Ala Lys Glu Ile Arg Cys Lys Thr Pro Gln Gly
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Pro Ser Thr Gly Lys Ala Glu Ile Gln Ile Leu Ile Asn Arg Ala Thr
    1010   1015   1020

Met Asn Asn Ser Glu Val His Tyr Asn Tyr Thr Glu Asp Pro Thr Val
1025   1030   1035   1040

Gln Lys Ile Glu Pro Glu Trp Ser Ile Ala Ser Gly Gly Thr Pro Leu
            1045   1050   1055

Ile Val Thr Gly Met Asn Leu Ala Thr Ile Lys Glu Pro Lys Ile Arg
            1060   1065   1070

Ala Lys Tyr Gly Asp Val Glu Lys Glu Asn Asn Cys Thr Leu Tyr Asn
        1075   1080   1085

Asp Thr Thr Met Val Cys Leu Ala Pro Ser Val Asp Asn Pro Leu Arg
    1090   1095   1100

Ser Pro Pro Glu Asn Gly Asp Arg Pro Asp Glu Ile Gly Phe Ile Met
1105   1110   1115   1120

Asp Asn Val His Ala Leu Leu Ile Val Asn Thr Thr Ser Phe Leu Tyr
            1125   1130   1135

Tyr Pro Asp Pro Val Phe Glu Pro Leu Thr Ala Ser Gly Asn Leu Glu
        1140   1145   1150

Leu Lys Pro Ser Ser Pro Leu Ile Ile Lys Gly Arg Asn Leu Ile Pro
        1155   1160   1165

Ala Ala Pro Gly Asn Phe Arg Leu Asn Tyr Thr Val Leu Ile Gly Asp
    1170   1175   1180

Thr Pro Cys Ala Leu Thr Val Ser Glu Thr Gln Leu Leu Cys Glu Ser
1185   1190   1195   1200

Pro Asn Leu Thr Gly Gln His Lys Val Thr Ile Lys Ala Gly Gly Phe
            1205   1210   1215

Glu Tyr Ser Pro Gly Thr Leu Gln Ile Tyr Ser Asp Ser Leu Leu Thr
        1220   1225   1230

Leu Pro Ala Ile Ile Gly Ile Gly Gly Gly Gly Leu Leu Leu Leu
        1235   1240   1245

Ile Ile Ile Ile Val Leu Ile Ala Tyr Lys Arg Lys Ser Arg Asp Ala
    1250   1255   1260

Asp Arg Thr Leu Lys Arg Leu Gln Leu Gln Met Asp Asn Leu Glu Ser
1265   1270   1275   1280

Arg Val Ala Leu Glu Cys Lys Glu Ala Phe Ala Glu Leu Gln Thr Asp
            1285   1290   1295

Ile His Glu Leu Thr Asn Asp Leu Asp Gly Ala Gly Ile Pro Phe Leu

Glu Tyr Arg Thr Tyr Ala Met Arg Val Leu Phe Pro Gly Ile Glu Asp
   1315   1320   1325

His Pro Val Leu Lys Glu Met Glu Val Gln Ala Asn Val Glu Lys Ser
   1330   1335   1340

Leu Thr Leu Phe Gly Gln Leu Leu Thr Lys Lys His Phe Leu Leu Thr
1345   1350   1355   1360

Phe Ile Arg Thr Leu Glu Ala Gln Arg Ser Phe Ser Met Arg Asp Arg
      1365   1370   1375

Gly Asn Val Ala Ser Leu Ile Met Thr Ala Leu Gln Gly Glu Met Glu
    1380   1385   1390

Tyr Ala Thr Gly Val Leu Lys Gln Leu Leu Ser Asp Leu Ile Glu Lys
    1395   1400   1405

Asn Leu Glu Ser Lys Asn His Pro Lys Leu Leu Leu Arg Arg Thr Glu
   1410   1415   1420

Ser Val Ala Glu Lys Met Leu Thr Asn Trp Phe Thr Phe Leu Leu Tyr
1425   1430   1435   1440

Lys Phe Leu Lys Glu Cys Ala Gly Glu Pro Leu Phe Met Leu His Cys
     1445   1450   1455

Ala Ile Lys Gln Gln Met Glu Lys Gly Pro Ile Asp Ala Ile Thr Gly
     1460   1465   1470

Glu Ala Arg Tyr Ser Leu Ser Glu Asp Lys Leu Ile Arg Gln Gln Ile
    1475   1480   1485

Asp Tyr Lys Thr Leu Asn Pro Cys Ala Asp Asp Val Gly Leu Ser Asp
   1490   1495   1500

Glu Ser Cys Cys Arg Ser Pro Gln Thr Leu Asn Cys Val Asn Pro Glu
1505   1510   1515   1520

Asn Glu Asn Ala Pro Glu Ile Pro Val Lys Val Leu Asn Cys Asp Thr
     1525   1530   1535

Ile Thr Gln Val Lys Glu Lys Leu Leu Asp Ala Val Tyr Lys Gly Val
     1540   1545   1550

Pro Tyr Ser Gln Arg Pro Lys Ala Gly Asp Met Asp Leu Glu Trp Arg
    1555   1560   1565

Gln Gly Arg Met Ala Arg Ile Ile Leu Gln Asp Glu Asp Val Thr Thr
   1570   1575   1580

Lys Ile Asp Asn Asp Trp Lys Arg Leu Asn Thr Leu Ala His Tyr Gln
1585   1590   1595   1600

Val Thr Asp Gly Ser Ser Val Ala Leu Val Pro Lys Gln Asn Ser Ala

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                    1605                  1610                    1615

Tyr Asn Ile Ser Asn Ser Ser Thr Phe Thr Lys Ser Leu Ser Arg Tyr
         1620                 1625                  1630

Glu Ser Met Leu Arg Thr Ala Ser Ser Pro Asp Ser Leu Arg Ser Arg
        1635                 1640                  1645

Thr Pro Met Ile Thr Pro Asp Leu Glu Ser Gly Thr Lys Leu Trp His
     1650                 1655                 1660

Leu Val Lys Asn His Asp His Leu Asp Gln Arg Glu Gly Asp Arg Gly
1665                 1670                 1675                  1680

Ser Lys Met Val Ser Glu Ile Tyr Leu Thr Arg Leu Leu Ala Thr Lys
            1685                 1690                  1695

Gly Thr Leu Gln Lys Phe Val Asp Asp Leu Phe Glu Thr Ile Phe Ser
         1700                 1705                  1710

Thr Ala His Arg Gly Ser Ala Leu Pro Leu Ala Ile Lys Tyr Met Phe
        1715                 1720                  1725

Asp Phe Leu Asp Glu Gln Ala Asp Lys His Gln Ile Thr Asp Tyr Asp
     1730                 1735                 1740

Val Arg His Thr Trp Lys Ser Asn Cys Leu Pro Leu Arg Phe Trp Val
1745                 1750                 1755                  1760

Asn Val Ile Lys Asn Pro Gln Phe Val Phe Asp Ile His Lys Asn Ser
            1765                 1770                  1775

Ile Thr Asp Ala Cys Leu Ser Val Val Ala Gln Thr Phe Met Asp Ser
         1780                 1785                  1790

'Cys Ser Thr Ser Glu His Lys Leu Gly Lys Asp Ser Pro Ser Asn Lys
         1795                 1800                  1805

Leu Leu Tyr Ala Lys Asp Ile Pro Asn Tyr Lys Ser Trp Val Glu Arg
    1810                 1815                 1820

Tyr Tyr Ala Asp Ile Ala Lys Met Pro Val Ile Ser Asp Gln Asp Met
1825                 1830                 1835                  1840

Ser Ala Tyr Leu Ala Glu Gln Ser Arg Leu His Leu Ser Gln Phe Asn
         1845                 1850                  1855

Ser Met Ser Ala Leu His Glu Ile Tyr Ser Tyr Ile Thr Lys Tyr Arg
            1860                 1865                  1870

Asp Glu Ile Leu Thr Ala Leu Glu Lys Asp Glu Gln Ala Arg Arg Gln
         1875                 1880                  1885

Arg Leu Arg Ser Lys Leu Glu Gln Val Ile Asp Thr Met Ala Gln Ser
    1890                 1895                 1900

Ser
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149

1905

<210> 45
<211> 813
<212> PRT
<213> Homo sapiens

<400> 45
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Gly Thr Arg Val Val Cys Lys Val Val Asn Thr Thr Thr Leu Thr Cys
  1               5                  10                  15

Leu Ala Pro Ser Leu Thr Thr Asp Tyr Arg Pro Gly Leu Asp Thr Val
             20                  25                  30

Glu Arg Pro Asp Glu Phe Gly Phe Val Phe Asn Asn Val Gln Ser Leu
         35                  40                  45

Leu Ile Tyr Asn Asp Thr Lys Phe Ile Tyr Tyr Pro Asn Pro Thr Phe
     50                  55                  60

Glu Leu Leu Ser Pro Thr Gly Val Leu Asp Gln Lys Pro Gly Ser Pro
 65                  70                  75                  80

Ile Ile Leu Lys Gly Lys Asn Leu Cys Pro Pro Ala Ser Gly Gly Ala
                 85                  90                  95

Lys Leu Asn Tyr Thr Val Leu Ile Gly Glu Thr Pro Cys Ala Val Thr
             100                 105                 110

Val Ser Glu Thr Gln Leu Leu Cys Glu Pro Pro Asn Leu Thr Gly Gln
         115                 120                 125

His Lys Val Met Val His Val Gly Gly Met Val Phe Ser Pro Gly Ser
     130                 135                 140

Val Ser Val Ile Ser Asp Ser Leu Leu Thr Leu Pro Ala Ile Val Ser
145                 150                 155                 160

Ile Ala Ala Gly Gly Ser Leu Leu Leu Ile Ile Val Ile Ile Val Leu
                 165                 170                 175

Ile Ala Tyr Lys Arg Lys Ser Arg Glu Asn Asp Leu Thr Leu Lys Arg
             180                 185                 190

Leu Gln Met Gln Met Asp Asn Leu Glu Ser Arg Val Ala Leu Glu Cys
         195                 200                 205

Lys Glu Ala Phe Ala Glu Leu Gln Thr Asp Ile Asn Glu Leu Thr Ser
     210                 215                 220

Asp Leu Asp Arg Ser Gly Ile Pro Tyr Leu Asp Tyr Arg Thr Tyr Ala
225                 230                 235                 240

Met Arg Val Leu Phe Pro Gly Ile Glu Asp His Pro Val Leu Arg Glu
             245                 250                 255
```

Leu Glu Val Gln Gly Asn Gly Gln Gln His Val Glu Lys Ala Leu Lys
            260   265   270

Leu Phe Ala Gln Leu Ile Asn Asn Lys Val Phe Leu Leu Thr Phe Ile
            275   280   285

Arg Thr Leu Glu Leu Gln Arg Ser Phe Ser Met Arg Asp Arg Gly Asn
            290   295   300

Val Ala Ser Leu Ile Met Thr Gly Leu Gln Gly Arg Leu Glu Tyr Ala
305   310   315   320

Thr Asp Val Leu Lys Gln Leu Leu Ser Asp Leu Ile Asp Lys Asn Leu
                325   330   335

Glu Asn Lys Asn His Pro Lys Leu Leu Leu Arg Arg Thr Glu Ser Val
            340   345   350

Ala Glu Lys Met Leu Thr Asn Trp Phe Ala Phe Leu Leu His Lys Phe
            355   360   365

Leu Lys Glu Cys Ala Gly Glu Pro Leu Phe Met Leu Tyr Cys Ala Ile
    370   375   380

Lys Gln Gln Met Glu Lys Gly Pro Ile Asp Ala Ile Thr Gly Glu Ala
385   390   395   400

Arg Tyr Ser Leu Ser Glu Asp Lys Leu Ile Arg Gln Gln Ile Glu Tyr
                405   410   415

Lys Thr Leu Ile Leu Asn Cys Val Asn Pro Asp Asn Glu Asn Ser Pro
            420   425   430

Glu Ile Pro Val Lys Val Leu Asn Cys Asp Thr Ile Thr Gln Val Lys
            435   440   445

Glu Lys Ile Leu Asp Ala Val Tyr Lys Asn Val Pro Tyr Ser Gln Arg
    450   455   460

Pro Arg Ala Val Asp Met Asp Leu Glu Trp Arg Gln Gly Arg Ile Ala
465   470   475   480

Arg Val Val Leu Gln Asp Glu Asp Ile Thr Thr Lys Ile Glu Gly Asp
                485   490   495

Trp Lys Arg Leu Asn Thr Leu Met His Tyr Gln Val Ser Asp Arg Ser
            500   505   510

Val Val Ala Leu Val Pro Lys Gln Thr Ser Ser Tyr Asn Ile Pro Ala
            515   520   525

Ser Ala Ser Ile Ser Arg Thr Ser Ile Ser Arg Tyr Asp Ser Ser Phe
    530   535   540

Arg Tyr Thr Gly Ser Pro Asp Ser Leu Arg Ser Arg Ala Pro Met Ile
545   550   555   560

151

```
Thr Pro Asp Leu Glu Ser Gly Val Lys Val Trp His Leu Val Lys Asn
            565             570             575

His Asp His Gly Asp Gln Lys Glu Gly Asp Arg Gly Ser Lys Met Val
            580             585             590

Ser Glu Ile Tyr Leu Thr Arg Leu Leu Ala Thr Lys Gly Thr Leu Gln
        595             600             605

Lys Phe Val Asp Asp Leu Phe Glu Thr Leu Leu Ser Thr Val His Arg
    610             615             620

Gly Ser Ala Leu Pro Leu Ala Ile Lys Tyr Met Phe Asp Phe Leu Asp
625             630             635             640

Glu Gln Ala Asp Arg His Ser Ile His Asp Thr Asp Val Arg His Thr
            645             650             655

Trp Lys Ser Asn Cys Leu Pro Leu Arg Phe Trp Val Asn Val Ile Lys
            660             665             670

Asn Pro Gln Phe Val Phe Asp Ile His Lys Gly Ser Ile Thr Asp Ala
        675             680             685

Cys Leu Ser Val Val Ala Gln Thr Phe Met Asp Ser Cys Ser Thr Ser
    690             695             700

Glu His Arg Leu Gly Lys Asp Ser Pro Ser Asn Lys Leu Leu Tyr Ala
705             710             715             720

Lys Asp Ile Pro Ser Tyr Lys Ser Trp Val Glu Arg Tyr Tyr Ala Asp
            725             730             735

Ile Ala Lys Leu Pro Ala Ile Ser Asp Gln Asp Met Asn Ala Tyr Leu
            740             745             750

Ala Glu Gln Ser Arg Leu His Ala Val Glu Phe Asn Met Leu Ser Ala
        755             760             765

Leu Asn Glu Ile Tyr Ser Tyr Val Ser Lys Tyr Ser Glu Glu Leu Ile
    770             775             780

Gly Ala Leu Glu Gln Asp Glu Gln Ala Arg Arg Gln Arg Leu Ala Tyr
785             790             795             800

Lys Val Glu Gln Leu Ile Asn Ala Met Ser Ile Glu Ser
            805             810


<210> 46
<211> 593
<212> PRT
<213> Homo sapiens

<400> 46
Val Glu Leu Thr Val Val Trp Asn Gly His Phe Asn Ile Asp Asn Pro
  1               5               10              15
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152

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Ala Gln Asn Lys Val His Leu Tyr Lys Cys Gly Ala Met Arg Glu Ser
            20                  25                  30

Cys Gly Leu Cys Leu Lys Ala Asp Pro Asp Phe Ala Cys Gly Trp Cys
            35                  40                  45

Gln Gly Pro Gly Gln Cys Thr Leu Arg Gln His Cys Pro Ala Gln Glu
        50                  55                  60

Ser Gln Trp Leu Glu Leu Ser Gly Ala Lys Ser Lys Cys Thr Asn Pro
65                  70                  75                  80

Arg Ile Thr Glu Ile Ile Pro Val Thr Gly Pro Arg Glu Gly Gly Thr
                85                  90                  95

Lys Val Thr Ile Arg Gly Glu Asn Leu Gly Leu Glu Phe Arg Asp Ile
            100                 105                 110

Ala Ser His Val Lys Val Ala Gly Val Glu Cys Ser Pro Leu Val Asp
        115                 120                 125

Gly Tyr Ile Pro Ala Glu Gln Ile Val Cys Glu Met Gly Glu Ala Lys
    130                 135                 140

Pro Ser Gln His Ala Gly Phe Val Glu Ile Cys Val Ala Val Cys Arg
145                 150                 155                 160

Pro Glu Phe Met Ala Arg Ser Ser Gln Leu Tyr Tyr Phe Met Thr Leu
            165                 170                 175

Thr Leu Ser Asp Leu Lys Pro Ser Arg Gly Pro Met Ser Gly Gly Thr
            180                 185                 190

Gln Val Thr Ile Thr Gly Thr Asn Leu Asn Ala Gly Ser Asn Val Val
        195                 200                 205

Val Met Phe Gly Lys Gln Pro Cys Leu Phe His Arg Arg Ser Pro Ser
    210                 215                 220

Tyr Ile Val Cys Asn Thr Thr Ser Ser Asp Glu Val Leu Glu Met Lys
225                 230                 235                 240

Val Ser Val Gln Val Asp Arg Ala Lys Ile His Gln Asp Leu Val Phe
            245                 250                 255

Gln Tyr Val Glu Asp Pro Thr Ile Val Arg Ile Glu Pro Glu Trp Ser
            260                 265                 270

Ile Val Ser Gly Asn Thr Pro Ile Ala Val Trp Gly Thr His Leu Asp
        275                 280                 285

Leu Ile Gln Asn Pro Gln Ile Arg Ala Lys His Gly Gly Lys Glu His
    290                 295                 300

Ile Asn Ile Cys Glu Val Leu Asn Ala Thr Glu Met Thr Cys Gln Ala
305                 310                 315                 320
```

153

Pro Ala Leu Ala Leu Gly Pro Asp His Gln Ser Asp Leu Thr Glu Arg
                325   330   335

Pro Glu Glu Phe Gly Phe Ile Leu Asp Asn Val Gln Ser Leu Leu Ile
                340   345   350

Leu Asn Lys Thr Asn Phe Thr Tyr Tyr Pro Asn Pro Val Phe Glu Ala
                355   360   365

Phe Gly Pro Ser Gly Ile Leu Glu Leu Lys Pro Gly Thr Pro Ile Ile
    370   375   380

Leu Lys Gly Lys Asn Leu Ile Pro Pro Val Ala Gly Gly Asn Val Lys
385   390   395   400

Leu Asn Tyr Thr Val Leu Val Gly Glu Lys Pro Cys Thr Val Thr Val
                405   410   415

Ser Asp Val Gln Leu Leu Cys Glu Ser Pro Asn Leu Ile Gly Arg His
                420   425   430

Lys Val Met Ala Arg Val Gly Gly Met Glu Tyr Ser Pro Gly Met Val
                435   440   445

Tyr Ile Ala Pro Asp Ser Pro Leu Ser Leu Pro Ala Ile Val Ser Ile
    450   455   460

Ala Val Ala Gly Gly Leu Leu Ile Ile Phe Ile Val Ala Val Leu Ile
465   470   475   480

Ala Tyr Lys Arg Lys Ser Arg Glu Ser Asp Leu Thr Leu Lys Arg Leu
                485   490   495

Gln Met Gln Met Asp Asn Leu Glu Ser Arg Val Ala Leu Glu Cys Lys
                500   505   510

Glu Gly Thr Glu Trp Pro His Ala Gly Gly His Val Cys Val Arg Val
                515   520   525

Cys Ile Cys Val Cys Met His Ile Cys Val Cys Val Cys Ile Cys Phe
    530   535   540

Ile Tyr Lys Gln Ala Gly Trp Ala Ala Val Gly Ser Ala Gly Gly Trp
545   550   555   560

Arg Cys Val Cys Leu Cys Glu Cys Val Cys Val His Val Cys Val Cys
                565   570   575

Thr Ser Val Cys Ile Tyr Val Ser Tyr Thr Ser Lys Gln Ala Gly Gln
                580   585   590

Gln

<210> 47

154

<211> 477
<212> PRT
<213> Homo sapiens

<400> 47
Met Leu Pro Pro Gly Ser Asn Gly Thr Ala Tyr Pro Gly Gln Phe Ala
1   5   10   15

Leu Tyr Gln Gln Leu Ala Gln Gly Asn Ala Val Gly Gly Ser Ala Gly
            20   25   30

Ala Pro Pro Leu Gly Pro Ser Gln Val Val Thr Ala Cys Leu Leu Thr
            35   40   45

Leu Leu Ile Ile Trp Thr Leu Leu Gly Asn Val Leu Val Cys Ala Ala
        50   55   60

Ile Val Arg Ser Arg His Leu Arg Ala Asn Met Thr Asn Val Phe Ile
65   70   75   80

Val Ser Leu Ala Val Ser Asp Leu Phe Val Ala Leu Leu Val Met Pro
                85   90   95

Trp Lys Ala Val Ala Glu Val Ala Gly Tyr Trp Pro Phe Gly Ala Phe
            100   105   110

Cys Asp Val Trp Val Ala Phe Asp Ile Met Cys Ser Thr Ala Ser Ile
            115   120   125

Leu Asn Leu Cys Val Ile Ser Val Asp Arg Tyr Trp Ala Ile Ser Arg
        130   135   140

Pro Phe Arg Tyr Lys Arg Lys Met Thr Gln Arg Met Ala Leu Val Met
145   150   155   160

Val Gly Leu Ala Trp Thr Leu Ser Ile Leu Ile Ser Phe Ile Pro Val
                165   170   175

Gln Leu Asn Trp His Arg Asp Gln Ala Ala Ser Trp Gly Gly Leu Asp
            180   185   190

Leu Pro Asn Asn Leu Ala Asn Trp Thr Pro Trp Glu Glu Asp Phe Trp
        195   200   205

Glu Pro Asp Val Asn Ala Glu Asn Cys Asp Ser Ser Leu Asn Arg Thr
        210   215   220

Tyr Ala Ile Ser Ser Ser Leu Ile Ser Phe Tyr Ile Pro Val Ala Ile
225   230   235   240

Met Ile Val Thr Tyr Thr Arg Ile Tyr Arg Ile Ala Gln Val Gln Ile
                245   250   255

Arg Arg Ile Ser Ser Leu Glu Arg Ala Ala Glu His Ala Gln Ser Cys
            260   265   270

Arg Ser Ser Ala Ala Cys Ala Pro Asp Thr Ser Leu Arg Ala Ser Ile

155

Lys Lys Glu Thr Lys Val Leu Lys Thr Leu Ser Val Ile Met Gly Val
    290   295   300

Phe Val Cys Cys Trp Leu Pro Phe Phe Ile Leu Asn Cys Met Val Pro
305   310   315   320

Phe Cys Ser Gly His Pro Glu Gly Pro Pro Ala Gly Phe Pro Cys Val
                325   330   335

Ser Glu Thr Thr Phe Asp Val Phe Val Trp Phe Gly Trp Ala Asn Ser
        340   345   350

Ser Leu Asn Pro Val Ile Tyr Ala Phe Asn Ala Asp Phe Gln Lys Val
        355   360   365

Phe Ala Gln Leu Leu Gly Cys Ser His Phe Cys Ser Arg Thr Pro Val
    370   375   380

Glu Thr Val Asn Ile Ser Asn Glu Leu Ile Ser Tyr Asn Gln Asp Ile
385   390   395   400

Val Phe His Lys Glu Ile Ala Ala Ala Tyr Ile His Met Met Pro Asn
                405   410   415

Ala Val Thr Pro Gly Asn Arg Glu Val Asp Asn Asp Glu Glu Glu Gly
        420   425   430

Pro Phe Asp Arg Met Phe Gln Ile Tyr Gln Thr Ser Pro Asp Gly Asp
        435   440   445

Pro Val Ala Glu Ser Val Trp Glu Leu Asp Cys Glu Gly Glu Ile Ser
    450   455   460

Leu Asp Lys Ile Thr Pro Phe Thr Pro Asn Gly Phe His
465   470   475

<210> 48
<211> 475
<212> PRT
<213> Homo sapiens

<400> 48
Met Leu Pro Pro Gly Arg Asn Arg Thr Ala Gln Pro Ala Arg Leu Gly
  1   5   10   15

Leu Gln Arg Gln Leu Ala Gln Val Asp Ala Pro Ala Gly Ser Ala Thr
                20   25   30

Pro Leu Gly Pro Ala Gln Val Val Thr Ala Gly Leu Leu Thr Leu Leu
        35   40   45

Ile Val Trp Thr Leu Leu Gly Asn Val Leu Val Cys Ala Ala Ile Val
    50   55   60

156

Arg Ser Arg His Leu Arg Ala Lys Met Thr Asn Ile Phe Ile Val Ser
65   70   75   80

Leu Ala Val Ser Asp Leu Phe Val Ala Leu Leu Val Met Pro Trp Lys
                85   90   95

Ala Val Ala Glu Val Ala Gly Tyr Trp Pro Phe Gly Thr Phe Cys Asp
                100   105   110

Ile Trp Val Ala Phe Asp Ile Met Cys Ser Thr Ala Ser Ile Leu Asn
            115   120   125

Leu Cys Ile Ile Ser Val Asp Arg Tyr Trp Ala Ile Ser Arg Pro Phe
    130   135   140

Arg Tyr Glu Arg Lys Met Thr Gln Arg Val Ala Leu Val Met Val Gly
145   150   155   160

Leu Ala Trp Thr Leu Ser Ile Leu Ile Ser Phe Ile Pro Val Gln Leu
            165   170   175

Asn Trp His Arg Asp Lys Ala Gly Ser Gln Gly Gln Glu Gly Leu Leu
        180   185   190

Ser Asn Gly Thr Pro Trp Glu Glu Gly Trp Glu Leu Glu Gly Arg Thr
    195   200   205

Glu Asn Cys Asp Ser Ser Leu Asn Arg Thr Tyr Ala Ile Ser Ser Ser
    210   215   220

Leu Ile Ser Phe Tyr Ile Pro Val Ala Ile Met Ile Val Thr Tyr Thr
225   230   235   240

Arg Ile Tyr Arg Ile Ala Gln Val Gln Ile Arg Arg Ile Ser Ser Leu
            245   250   255

Glu Arg Ala Ala Glu His Ala Gln Ser Cys Arg Ser Arg Gly Ala Tyr
            260   265   270

Glu Pro Asp Pro Ser Leu Arg Ala Ser Ile Lys Lys Glu Thr Lys Val
    275   280   285

Phe Lys Thr Leu Ser Met Ile Met Gly Val Phe Val Cys Cys Trp Leu
    290   295   300

Pro Phe Phe Ile Leu Asn Cys Met Val Pro Phe Cys Ser Ser Gly Asp
305   310   315   320

Ala Glu Gly Pro Lys Thr Gly Phe Pro Cys Val Ser Glu Thr Thr Phe
            325   330   335

Asp Ile Phe Val Trp Phe Gly Trp Ala Asn Ser Ser Leu Asn Pro Ile
            340   345   350

Ile Tyr Ala Phe Asn Ala Asp Phe Arg Lys Val Phe Ala Gln Leu Leu
    355   360   365

157

```
Gly Cys Ser His Phe Cys Phe Arg Thr Pro Val Gln Thr Val Asn Ile
    370                 375                 380

Ser Asn Glu Leu Ile Ser Tyr Asn Gln Asp Thr Val Phe His Lys Glu
385                 390                 395                 400

Ile Ala Thr Ala Tyr Val His Met Ile Pro Asn Ala Val Ser Ser Gly
                405                 410                 415

Asp Arg Glu Val Gly Glu Glu Glu Glu Gly Pro Phe Asp His Met
    420                 425                 430

Ser Gln Ile Ser Pro Thr Thr Pro Asp Gly Asp Leu Ala Ala Glu Ser
    435                 440                 445

Val Trp Glu Leu Asp Cys Glu Glu Glu Val Ser Leu Gly Lys Ile Ser
    450                 455                 460

Pro Leu Thr Pro Asn Cys Phe Asp Lys Thr Ala
465                 470                 475
```

<210> 49
<211> 457
<212> PRT
<213> Homo sapiens

<400> 49
```
Met Tyr Gln Pro Phe Gln His Leu Asp Ser Asp Gln Val Ala Ser Trp
  1             5                 10                  15

Gln Ser Pro Glu Met Leu Met Asn Lys Ser Val Ser Arg Glu Ser Gln
            20                  25                  30

Arg Arg Lys Glu Leu Val Ala Gly Gln Ile Val Thr Gly Ser Leu Leu
            35                  40                  45

Leu Leu Leu Ile Phe Trp Thr Leu Phe Gly Asn Ile Leu Val Cys Thr
    50                  55                  60

Ala Val Met Arg Phe Arg His Leu Arg Ser Arg Val Thr Asn Ile Phe
65                  70                  75                  80

Ile Val Ser Leu Ala Val Ser Asp Leu Leu Val Ala Leu Leu Val Met
                85                  90                  95

Pro Trp Lys Ala Val Ala Glu Val Ala Gly His Trp Pro Phe Gly Ala
            100                 105                 110

Phe Cys Asp Ile Trp Val Ala Phe Asp Ile Met Cys Ser Thr Ala Ser
            115                 120                 125

Ile Leu Asn Leu Cys Val Ile Ser Val Asp Arg Tyr Trp Ala Ile Ser
    130                 135                 140

Ser Pro Phe Arg Tyr Glu Arg Lys Met Thr Gln Arg Val Ala Leu Leu
145                 150                 155                 160
```

158

```
Met Ile Ser Thr Ala Trp Ala Leu Ser Val Leu Ile Ser Phe Ile Pro
            165                 170                 175

Val Gln Leu Ser Trp His Lys Ser Glu Thr Glu Asp His Leu Leu Ser
            180                 185                 190

Asn His Ser Thr Gly Asn Cys Asp Ser Ser Leu Asn Arg Thr Tyr Ala
            195                 200                 205

Ile Ser Ser Ser Leu Ile Ser Phe Tyr Ile Pro Val Ala Ile Met Ile
    210                 215                 220

Val Thr Tyr Thr Arg Ile Tyr Arg Ile Ala Gln Ile Gln Ile Lys Arg
225                 230                 235                 240

Ile Ser Thr Leu Glu Arg Ala Ala Glu His Ala Gln Ser Cys Arg Ser
            245                 250                 255

Asn Arg Val Asp Ser Cys Ser Arg His His Gln Thr Ser Leu Arg Thr
            260                 265                 270

Ser Ile Lys Lys Glu Thr Lys Val Leu Lys Thr Leu Ser Ile Ile Met
            275                 280                 285

Gly Val Phe Val Cys Cys Trp Leu Pro Phe Phe Ile Leu Asn Cys Met
    290                 295                 300

Val Pro Phe Cys Asp Arg Ser Pro Gly His Pro Gln Ala Gly Leu Pro
305                 310                 315                 320

Cys Val Ser Glu Thr Thr Phe Asp Ile Phe Val Trp Phe Gly Trp Ala
            325                 330                 335

Asn Ser Ser Leu Asn Pro Ile Ile Tyr Ala Phe Asn Ala Asp Phe Arg
            340                 345                 350

Lys Val Phe Ser Ser Leu Leu Gly Cys Gly His Trp Cys Ser Thr Thr
            355                 360                 365

Pro Val Glu Thr Val Asn Ile Ser Asn Glu Leu Ile Ser Tyr Asn Gln
    370                 375                 380

Asp Thr Leu Phe His Lys Asp Ile Val Thr Ala Tyr Val Asn Met Ile
385                 390                 395                 400

Pro Asn Val Val Asp Cys Ile Asp Asp Asn Glu Asp Ala Phe Asp His
            405                 410                 415

Met Ser Gln Ile Ser Gln Thr Ser Ala Asn Asn Glu Leu Ala Thr Asp
            420                 425                 430

Ser Met Cys Glu Leu Asp Ser Glu Val Asp Ile Ser Leu His Lys Ile
            435                 440                 445

Thr Pro Ser Met Ser Asn Gly Ile His
450                 455
```

<210> 50
<211> 486
<212> PRT
<213> Gallus gallus

<400> 50
Met Leu Arg Gly Gly Arg Ser Pro Leu Pro Pro Pro Ala Gly Pro Pro
 1   5   10   15

Gly Gly Ala Arg Gly Gln Ala Gly Ala Gly Ala Ala Gln Val Ala Ala
            20   25   30

Gly Ser Leu Leu Ala Leu Leu Ile Leu Trp Thr Leu Phe Gly Asn Val
         35   40   45

Leu Val Cys Ala Ala Ile Val Arg Tyr Arg His Leu Arg Ser Lys Val
     50   55   60

Thr Asn Ile Phe Ile Val Ser Leu Ala Val Ser Asp Leu Leu Val Ala
 65   70   75   80

Val Leu Val Met Pro Trp Lys Ala Val Ala Glu Val Ala Gly Tyr Trp
                 85   90   95

Pro Phe Gly Ala Phe Gln Asn Val Trp Val Ala Phe Asp Ile Met Cys
            100   105   110

Ser Thr Ala Ser Ile Leu Asn Leu Cys Val Ile Ser Val Asp Arg Tyr
         115   120   125

Trp Ala Ile Ser Ser Pro Phe Arg Tyr Glu Arg Lys Met Thr Gln Arg
    130   135   140

Leu Ala Leu Val Met Ile Gly Val Ala Trp Ala Leu Ser Val Leu Ile
145   150   155   160

Ser Phe Ile Pro Val Gln Leu Asn Trp His Arg Gly Gly Asp Ala Ala
            165   170   175

Thr Ala Ala Ala Ala Gly Asp Ile Glu Asp Gly Phe Asp Thr Gly Trp
            180   185   190

Glu Ala Ala Gly Ala Phe Thr Thr Trp Ala Glu Asp Met Ser Thr Thr
            195   200   205

Trp Val Ala Leu Ala Ala Met Thr Pro Ser Glu Gly Thr Ser Gly Ser
    210   215   220

Asn Asn Thr Val Pro Gly Pro Ser Glu Ser Cys Asp Ser Ser Leu Asn
225   230   235   240

Arg Thr Tyr Ala Ile Ser Ser Ser Leu Ile Ser Phe Tyr Ile Pro Val
            245   250   255

Ala Ile Met Ile Val Thr Tyr Thr Arg Ile Tyr Arg Ile Ala Gln Val

160

Gln Ile Arg Arg Ile Ser Ser Leu Glu Arg Ala Ala Glu His Ala Gln
        275   280   285

Ser Cys Arg Cys Asn His Val Asp Cys His His His Thr Ser Leu Lys
        290   295   300

Ser Ser Ile Arg Lys Glu Thr Lys Val Leu Lys Thr Leu Ser Ile Ile
305   310   315   320

Met Gly Val Phe Val Cys Cys Trp Leu Pro Phe Phe Ile Leu Asn Cys
                325   330   335

Met Val Pro Phe Cys Glu Ser Pro Pro Ser Asp Pro Arg Ala Gly Leu
                340   345   350

Pro Cys Val Ser Glu Thr Thr Phe Asn Ile Phe Val Trp Phe Gly Trp
                355   360   365

Ala Asn Ser Ser Leu Asn Pro Ile Ile Tyr Ala Phe Asn Ala Asp Phe
        370   375   380

Arg Lys Val Phe Ser Asn Leu Leu Gly Cys Gly Gln Phe Cys Ser Ser
385   390   395   400

Thr Pro Val Glu Thr Val Asn Ile Ser Asn Glu Leu Ile Ser Tyr His
                405   410   415

Gln Asp Thr Phe His Lys Glu Ile Val Thr Ala Tyr Val Asn Met Ile
                420   425   430

Pro Asn Val Val Asp Cys Glu Glu Asn Arg Glu Asp Pro Phe Asp Arg
        435   440   445

Met Ser Gln Ile Ser Pro Asp Pro Glu Val Ala Thr Asp Ser Val Cys
        450   455   460

Glu Leu Asp Cys Glu Gly Glu Ile Ser Leu Gly Lys Ile Thr Pro Phe
465   470   475   480

Thr Pro Asn Gly Leu His
                485

<210> 51
<211> 458
<212> PRT
<213> Anguilla anguilla

<400> 51
Met Gly Ser Pro Ala Lys Tyr Leu Ser Val His Glu Thr Gln Ser Val
    1   5   10   15

Pro Phe Phe Ile Gly Glu Ile Met Trp Asn Thr Ser Glu Ser Ala Glu
                20   25   30

161

```
Lys Thr Asp Gly Lys Lys Glu Leu Ile Val Arg Thr Val Thr Gly Cys
        35                40                45

Leu Leu Ser Leu Leu Ile Leu Trp Thr Leu Leu Gly Asn Ile Leu Val
        50                55                60

Cys Ser Ala Val Leu Lys Phe Arg His Leu Arg Thr Lys Val Thr Asn
65                70                75                80

Ile Phe Ile Val Ser Leu Ala Val Ser Asp Leu Phe Val Ala Val Leu
                85                90                95

Val Met Pro Trp Lys Ala Val Ala Glu Val Ala Gly Tyr Trp Pro Phe
            100               105               110

Gly Pro Phe Cys Asn Ile Trp Val Ala Phe Asp Ile Met Cys Ser Thr
            115               120               125

Ala Ser Ile Leu Asn Leu Cys Ile Ile Ser Val Asp Arg Tyr Trp Ala
        130               135               140

Ile Ser Ser Pro Phe Arg Tyr Glu Arg Lys Met Thr Gln Arg Val Ala
145               150               155               160

Phe Val Met Ile Ser Val Thr Trp Thr Leu Ser Val Leu Ile Ser Phe
                165               170               175

Ile Pro Val Gln Leu Asn Trp His Lys Ala Ser Asp Glu Glu Val Trp
            180               185               190

Ile Asn Gly Thr Ser Phe Gly Glu Lys Ser Glu Asn Cys Asp Ser Ser
            195               200               205

Leu Asn Arg Glu Tyr Ala Ile Ser Ser Ser Leu Ile Ser Phe Tyr Ile
        210               215               220

Pro Val Ala Ile Met Ile Val Thr Tyr Thr Arg Ile Tyr Arg Ile Ala
225               230               235               240

Gln Ile Gln Ile Arg Arg Ile Ser Ser Leu Glu Arg Ala Ala Glu His
            245               250               255

Ala Gln Ser Cys Arg Thr Asn Arg Leu Glu Cys Gln His His Asn Thr
            260               265               270

Leu Lys Thr Ser Ile Lys Arg Glu Thr Lys Val Phe Lys Thr Leu Ser
        275               280               285

Val Ile Met Gly Val Phe Val Cys Cys Trp Leu Pro Phe Phe Ile Leu
        290               295               300

Asn Cys Ile Val Pro Phe Cys Asp Arg Pro Pro Thr Asp His Thr Ala
305               310               315               320

Gly Leu Pro Cys Val Ser Asp Thr Thr Phe Asp Val Phe Val Trp Phe
            325               330               335
```

```
Gly Trp Thr Asn Ser Ser Leu Asn Pro Ile Ile Tyr Ala Phe Asn Ala
            340             345             350

Asp Phe Arg Lys Ala Phe Ala Ser Leu Leu Gly Cys Arg Asn Phe Cys
            355             360             365

Ser Arg Thr Pro Val Glu Thr Val Asn Ile Ser Asn Glu Leu Val Ser
            370             375             380

Tyr Asn Gln Asp Thr Leu Phe His Lys Glu Ile Val Thr Ala Tyr Val
385             390             395             400

Asn Met Ile Pro Asn Val Val Asp Cys Ile Asp Asp Asn Glu Asp Thr
            405             410             415

Phe Asp Arg Ile Ser Gln Phe Ser His Asn Asn Glu Ile Ala Thr Asp
            420             425             430

Ser Val Cys Asp Leu Asp Asp Cys Glu Ala Asp Ile Cys Leu Asp Arg
            435             440             445

Leu Ala Pro Phe Thr Pro Asn Gly Leu His
    450             455
```

<210> 52
<211> 879
<212> PRT
<213> Rattus norvegicus

<400> 52
```
Met Lys Met Leu Thr Arg Leu Gln Ile Leu Met Leu Ala Leu Phe Ser
  1             5               10              15

Lys Gly Phe Leu Leu Ser Leu Gly Asp His Asn Phe Met Arg Arg Glu
            20              25              30

Ile Lys Ile Glu Gly Asp Leu Val Leu Gly Gly Leu Phe Pro Ile Asn
            35              40              45

Glu Lys Gly Thr Gly Thr Glu Glu Cys Gly Arg Ile Asn Glu Asp Arg
    50              55              60

Gly Ile Gln Arg Leu Glu Ala Met Leu Phe Ala Ile Asp Glu Ile Asn
65              70              75              80

Lys Asp Asn Tyr Leu Leu Pro Gly Val Lys Leu Gly Val His Ile Leu
            85              90              95

Asp Thr Cys Ser Arg Asp Thr Tyr Ala Leu Glu Gln Ser Leu Glu Phe
            100             105             110

Val Arg Ala Ser Leu Thr Lys Val Asp Glu Ala Glu Tyr Met Cys Pro
            115             120             125

Asp Gly Ser Tyr Ala Ile Gln Glu Asn Ile Pro Leu Leu Ile Ala Gly
    130             135             140
```

163

```
Val Ile Gly Gly Ser Tyr Ser Ser Val Ser Ile Gln Val Ala Asn Leu
145             150             155             160

Leu Arg Leu Phe Gln Ile Pro Gln Ile Ser Tyr Ala Ser Thr Ser Ala
                165             170             175

Lys Leu Ser Asp Lys Ser Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro
            180             185             190

Pro Asp Phe Tyr Gln Ala Lys Ala Met Ala Glu Ile Leu Arg Phe Phe
            195             200             205

Asn Trp Thr Tyr Val Ser Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu
    210             215             220

Thr Gly Ile Glu Ala Phe Glu Gln Glu Ala Arg Leu Arg Asn Ile Cys
225             230             235             240

Ile Ala Thr Ala Glu Lys Val Gly Arg Ser Asn Ile Arg Lys Ser Tyr
            245             250             255

Asp Ser Val Ile Arg Glu Leu Leu Gln Lys Pro Asn Ala Arg Val Val
            260             265             270

Val Leu Phe Met Arg Ser Asp Asp Ser Arg Glu Leu Ile Ala Ala Ala
            275             280             285

Asn Arg Val Asn Ala Ser Phe Thr Trp Val Ala Ser Asp Gly Trp Gly
    290             295             300

Ala Gln Glu Ser Ile Val Lys Gly Ser Glu His Val Ala Tyr Gly Ala
305             310             315             320

Ile Thr Leu Glu Leu Ala Ser His Pro Val Arg Gln Phe Asp Arg Tyr
            325             330             335

Phe Gln Ser Leu Asn Pro Tyr Asn Asn His Arg Asn Pro Trp Phe Arg
            340             345             350

Asp Phe Trp Glu Gln Lys Phe Gln Cys Ser Leu Gln Asn Lys Arg Asn
            355             360             365

His Arg Gln Val Cys Asp Lys His Leu Ala Ile Asp Ser Ser Asn Tyr
    370             375             380

Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala Val Tyr Ala Met
385             390             395             400

Ala His Ala Leu His Lys Met Gln Arg Thr Leu Cys Pro Asn Thr Thr
            405             410             415

Lys Leu Cys Asp Ala Met Lys Ile Leu Asp Gly Lys Lys Leu Tyr Lys
            420             425             430

Glu Tyr Leu Leu Lys Ile Asn Phe Thr Ala Pro Phe Asn Pro Asn Lys
            435             440             445
```

164

Gly Ala Asp Ser Ile Val Lys Phe Asp Thr Phe Gly Asp Gly Met Gly
    450   455   460

Arg Tyr Asn Val Phe Asn Leu Gln Gln Thr Gly Gly Lys Tyr Ser Tyr
465   470   475   480

Leu Lys Val Gly His Trp Ala Glu Thr Leu Ser Leu Asp Val Asp Ser
            485   490   495

Ile His Trp Ser Arg Asn Ser Val Pro Thr Ser Gln Cys Ser Asp Pro
            500   505   510

Cys Ala Pro Asn Glu Met Lys Asn Met Gln Pro Gly Asp Val Cys Cys
            515   520   525

Trp Ile Cys Ile Pro Cys Glu Pro Tyr Glu Tyr Leu Val Asp Glu Phe
    530   535   540

Thr Cys Met Asp Cys Gly Pro Gly Gln Trp Pro Thr Ala Asp Leu Ser
545   550   555   560

Gly Cys Tyr Asn Leu Pro Glu Asp Tyr Ile Lys Trp Glu Asp Ala Trp
            565   570   575

Ala Ile Gly Pro Val Thr Ile Ala Cys Leu Gly Phe Leu Cys Thr Cys
            580   585   590

Ile Val Ile Thr Val Phe Ile Lys His Asn Asn Thr Pro Leu Val Lys
            595   600   605

Ala Ser Gly Arg Glu Leu Cys Tyr Ile Leu Leu Phe Gly Val Ser Leu
    610   615   620

Ser Tyr Cys Met Thr Phe Phe Phe Ile Ala Lys Pro Ser Pro Val Ile
625   630   635   640

Cys Ala Leu Arg Arg Leu Gly Leu Gly Thr Ser Phe Ala Ile Cys Tyr
            645   650   655

Ser Ala Leu Leu Thr Lys Thr Asn Cys Ile Ala Arg Ile Phe Asp Gly
            660   665   670

Val Lys Asn Gly Ala Gln Arg Pro Lys Phe Ile Ser Pro Ser Ser Gln
            675   680   685

Val Phe Ile Cys Leu Gly Leu Ile Leu Val Gln Ile Val Met Val Ser
            690   695   700

Val Trp Leu Ile Leu Glu Thr Pro Gly Thr Arg Arg Tyr Thr Leu Pro
705   710   715   720

Glu Lys Arg Glu Thr Val Ile Leu Lys Cys Asn Val Lys Asp Ser Ser
            725   730   735

Met Leu Ile Ser Leu Thr Tyr Asp Val Val Leu Val Ile Leu Cys Thr
            740   745   750

165

Val Tyr Ala Phe Lys Thr Arg Lys Cys Pro Glu Asn Phe Asn Glu Ala
        755   760   765

Lys Phe Ile Gly Phe Thr Met Tyr Thr Thr Cys Ile Ile Trp Leu Ala
        770   775   780

Phe Leu Pro Ile Phe Tyr Val Thr Ser Ser Asp Tyr Arg Val Gln Thr
785   790   795   800

Thr Thr Met Cys Ile Ser Val Ser Leu Ser Gly Phe Val Val Leu Gly
                805   810   815

Cys Leu Phe Ala Pro Lys Val His Ile Val Leu Phe Gln Pro Gln Lys
                820   825   830

Asn Val Val Thr His Arg Leu His Leu Asn Arg Phe Ser Val Ser Gly
                835   840   845

Thr Ala Thr Thr Tyr Ser Gln Ser Ser Ala Ser Thr Tyr Val Pro Thr
        850   855   860

Val Cys Asn Gly Arg Glu Val Leu Asp Ser Thr Thr Ser Ser Leu
865   870   875

<210> 53
<211> 879
<212> PRT
<213> Mus musculus

<400> 53
Met Lys Met Leu Thr Arg Leu Gln Val Leu Met Leu Ala Leu Phe Ser
    1   5   10   15

Lys Gly Phe Leu Val Ser Leu Gly Asp His Asn Phe Met Arg Arg Glu
            20   25   30

Ile Lys Ile Glu Gly Asp Leu Val Leu Gly Gly Leu Phe Pro Ile Asn
            35   40   45

Glu Lys Gly Thr Gly Thr Glu Glu Cys Gly Arg Ile Asn Glu Asp Arg
        50   55   60

Gly Ile Gln Arg Leu Glu Ala Met Leu Phe Ala Ile Asp Glu Ile Asn
65   70   75   80

Lys Asp Asn Tyr Leu Leu Pro Gly Val Lys Leu Gly Val His Ile Leu
                85   90   95

Asp Thr Cys Ser Arg Asp Thr Tyr Ala Leu Glu Gln Ser Leu Glu Phe
            100   105   110

Val Arg Ala Ser Leu Thr Lys Val Asp Glu Ala Glu Tyr Met Cys Pro
        115   120   125

Asp Gly Ser Tyr Ala Ile Gln Glu Asn Ile Pro Leu Leu Ile Ala Gly

Val Ile Gly Gly Ser Tyr Ser Ser Val Ser Ile Gln Val Ala Asn Leu
145   150   155   160

Leu Arg Leu Phe Gln Ile Pro Gln Ile Ser Tyr Ala Ser Thr Ser Ala
                165   170   175

Lys Leu Ser Asp Lys Ser Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro
                180   185   190

Pro Asp Phe Tyr Gln Ala Lys Ala Met Ala Glu Ile Leu Arg Tyr Phe
                195   200   205

Asn Trp Thr Tyr Val Ser Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu
        210   215   220

Thr Gly Ile Glu Ala Phe Glu Gln Glu Ala Arg Leu Arg Asn Ile Cys
225   230   235   240

Ile Ala Thr Ala Glu Lys Val Gly Arg Ser Asn Ile Arg Lys Ser Tyr
                245   250   255

Asp Ser Val Ile Arg Glu Leu Leu Gln Lys Pro Asn Ala Arg Val Val
                260   265   270

Val Leu Phe Met Arg Ser Asp Asp Ser Arg Glu Leu Ile Ala Ala Ala
                275   280   285

Ser Arg Val Asn Ala Ser Phe Thr Trp Val Ala Ser Asp Gly Trp Gly
        290   295   300

Ala Gln Glu Ser Ile Val Lys Gly Ser Glu His Val Ala Tyr Gly Ala
305   310   315   320

Ile Thr Leu Glu Leu Ala Ser His Pro Val Arg Gln Phe Asp Arg Tyr
                325   330   335

Phe Gln Ser Leu Asn Pro Tyr Asn Asn His Arg Asn Pro Trp Phe Arg
                340   345   350

Asp Phe Trp Glu Gln Lys Phe Gln Cys Ser Leu Gln Asn Lys Arg Asn
        355   360   365

His Arg Gln Ile Cys Asp Lys His Leu Ala Ile Asp Ser Ser Asn Tyr
        370   375   380

Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala Val Tyr Ala Met
385   390   395   400

Ala His Ala Leu His Lys Met Gln Arg Thr Leu Cys Pro Asn Thr Thr
                405   410   415

Lys Leu Cys Asp Ala Met Lys Ile Leu Asp Gly Lys Lys Leu Tyr Lys
                420   425   430

Asp Tyr Leu Leu Lys Ile Asn Phe Thr Ala Pro Phe Asn Pro Asn Lys

Gly Ala Asp Ser Ile Val Lys Phe Asp Thr Tyr Gly Asp Gly Met Gly
    450   455   460

Arg Tyr Asn Val Phe Asn Phe Gln His Ile Gly Gly Lys Tyr Ser Tyr
465   470   475   480

Leu Lys Val Gly His Trp Ala Glu Thr Leu Tyr Leu Asp Val Asp Ser
            485   490   495

Ile His Trp Ser Arg Asn Ser Val Pro Thr Ser Gln Cys Ser Asp Pro
        500   505   510

Cys Ala Pro Asn Glu Met Lys Asn Met Gln Pro Gly Asp Val Cys Cys
        515   520   525

Trp Ile Cys Ile Pro Cys Glu Pro Tyr Glu Tyr Leu Val Asp Glu Phe
    530   535   540

Thr Cys Met Asp Cys Gly Pro Gly Gln Trp Pro Thr Ala Asp Leu Ser
545   550   555   560

Gly Cys Tyr Asn Leu Pro Glu Asp Tyr Ile Arg Trp Glu Asp Ala Trp
            565   570   575

Ala Ile Gly Pro Val Thr Ile Ala Cys Leu Gly Phe Met Cys Thr Cys
        580   585   590

Ile Val Ile Thr Val Phe Ile Lys His Asn Asn Thr Pro Leu Val Lys
    595   600   605

Ala Ser Gly Arg Glu Leu Cys Tyr Ile Leu Leu Phe Gly Val Ser Leu
    610   615   620

Ser Tyr Cys Met Thr Phe Phe Phe Ile Ala Lys Pro Ser Pro Val Ile
625   630   635   640

Cys Ala Leu Arg Arg Leu Gly Leu Gly Thr Ser Phe Ala Ile Cys Tyr
        645   650   655

Ser Ala Leu Leu Thr Lys Thr Asn Cys Ile Ala Arg Ile Phe Asp Gly
        660   665   670

Val Lys Asn Gly Ala Gln Arg Pro Lys Phe Ile Ser Pro Ser Ser Gln
        675   680   685

Val Phe Ile Cys Leu Gly Leu Ile Leu Val Gln Ile Val Met Val Ser
    690   695   700

Val Trp Leu Ile Leu Glu Thr Pro Gly Thr Arg Arg Tyr Thr Leu Pro
705   710   715   720

Glu Lys Arg Glu Thr Val Ile Leu Lys Cys Asn Val Lys Asp Ser Ser
            725   730   735

Met Leu Ile Ser Leu Thr Tyr Asp Val Val Leu Val Ile Leu Cys Thr

168

```
               740                    745                      750

Val Tyr Ala Phe Lys Thr Arg Lys Cys Pro Glu Asn Phe Asn Glu Ala
        755                  760                  765

Lys Phe Ile Gly Phe Thr Met Tyr Thr Thr Cys Ile Ile Trp Leu Ala
        770                  775                  780

Phe Leu Pro Ile Phe Tyr Val Thr Ser Ser Asp Tyr Arg Val Gln Thr
785                  790                  795                  800

Thr Thr Met Cys Ile Ser Val Ser Leu Ser Gly Phe Val Val Leu Gly
                805                  810                  815

Cys Leu Phe Ala Pro Lys Val His Ile Val Leu Phe Gln Pro Gln Lys
            820                  825                  830

Asn Val Val Thr His Arg Leu His Leu Asn Arg Phe Ser Val Ser Gly
            835                  840                  845

Thr Ala Thr Thr Tyr Ser Gln Ser Ser Ala Ser Thr Tyr Val Pro Thr
        850                  855                  860

Val Cys Asn Gly Arg Glu Val Leu Asp Ser Thr Thr Ser Ser Leu
865                  870                  875


<210> 54
<211> 879
<212> PRT
<213> Mus musculus

<400> 54
Met Lys Met Leu Thr Arg Leu Gln Val Leu Met Leu Ala Leu Phe Ser
  1               5                  10                  15

Lys Gly Phe Leu Val Ser Leu Gly Asp His Asn Phe Met Arg Arg Glu
            20                  25                  30

Ile Lys Ile Glu Gly Asp Leu Val Leu Gly Gly Leu Phe Pro Ile Asn
        35                  40                  45

Glu Lys Gly Thr Gly Thr Glu Glu Cys Arg Gly Ile Asn Glu Asp Arg
    50                  55                  60

Gly Ile Gln Arg Leu Glu Ala Met Leu Phe Ala Ile Asp Glu Ile Asn
65                  70                  75                  80

Lys Asp Asn Tyr Leu Leu Pro Gly Val Lys Leu Gly Val His Ile Leu
                85                  90                  95

Asp Thr Cys Ser Arg Asp Thr Tyr Ala Leu Glu Gln Ser Leu Glu Phe
            100                 105                 110

Val Arg Ala Ser Leu Thr Lys Val Asp Glu Ala Glu Tyr Met Cys Pro
        115                 120                 125


                              169
```

```
Asp Gly Ser Tyr Ala Ile Gln Glu Asn Ile Pro Leu Leu Ile Ala Gly
    130             135             140
Val Ile Gly Gly Ser Tyr Ser Ser Val Ser Ile Gln Val Ala Asn Leu
145             150             155             160
Leu Arg Leu Phe Gln Ile Pro Gln Ile Ser Tyr Ala Ser Thr Ser Ala
            165             170             175
Lys Leu Ser Asp Lys Ser Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro
        180             185             190
Pro Asp Phe Tyr Gln Ala Lys Ala Met Ala Glu Ile Leu Arg Tyr Phe
        195             200             205
Asn Trp Thr Tyr Val Ser Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu
    210             215             220
Thr Gly Ile Glu Ala Phe Glu Gln Glu Ala Arg Leu Arg Asn Ile Cys
225             230             235             240
Ile Ala Thr Ala Glu Lys Val Gly Arg Ser Asn Ile Arg Lys Ser Tyr
            245             250             255
Asp Ser Val Ile Arg Glu Leu Leu Gln Lys Pro Asn Ala Arg Val Val
        260             265             270
Val Leu Phe Met Arg Ser Asp Asp Ser Arg Glu Leu Ile Ala Ala Ala
        275             280             285
Ser Arg Val Asn Ala Ser Phe Thr Trp Val Ala Ser Asp Gly Trp Gly
    290             295             300
Ala Gln Glu Ser Ile Val Lys Gly Ser Glu His Val Ala Tyr Gly Ala
305             310             315             320
Ile Thr Leu Glu Leu Ala Ser His Pro Val Arg Gln Phe Asp Arg Tyr
            325             330             335
Phe Gln Ser Leu Asn Pro Tyr Asn Asn His Arg Asn Pro Trp Phe Arg
            340             345             350
Asp Phe Trp Glu Gln Lys Phe Gln Cys Ser Leu Gln Asn Lys Arg Asn
        355             360             365
His Arg Gln Ile Cys Asp Lys His Leu Ala Ile Asp Ser Ser Asn Tyr
    370             375             380
Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala Val Tyr Ala Met
385             390             395             400
Ala His Ala Leu His Lys Met Gln Arg Thr Leu Cys Pro Asn Thr Thr
            405             410             415
Lys Leu Cys Asp Ala Met Lys Ile Leu Asp Gly Lys Lys Leu Tyr Lys
        420             425             430
```

170

Asp Tyr Leu Leu Lys Ile Asn Phe Thr Ala Pro Phe Asn Pro Asn Lys
        435   440   445

Gly Ala Asp Ser Ile Val Lys Phe Asp Thr Tyr Gly Asp Gly Met Gly
        450   455   460

Arg Tyr Asn Val Phe Asn Phe Gln His Ile Gly Gly Lys Tyr Ser Tyr
465   470   475   480

Leu Lys Val Gly His Trp Ala Glu Thr Leu Tyr Leu Asp Val Asp Ser
                485   490   495

Ile His Trp Ser Arg Asn Ser Val Pro Thr Ser Gln Cys Ser Asp Pro
            500   505   510

Cys Ala Pro Asn Glu Met Lys Asn Met Gln Pro Gly Asp Val Cys Cys
        515   520   525

Trp Ile Cys Ile Pro Cys Glu Pro Tyr Glu Tyr Leu Val Asp Glu Phe
    530   535   540

Thr Cys Met Asp Cys Gly Pro Gly Gln Trp Pro Thr Ala Asp Leu Ser
545   550   555   560

Gly Cys Tyr Asn Leu Pro Glu Asp Tyr Ile Arg Trp Glu Asp Ala Trp
            565   570   575

Ala Ile Gly Pro Val Thr Ile Ala Cys Leu Gly Phe Met Cys Thr Cys
            580   585   590

Ile Val Ile Thr Val Phe Ile Lys His Asn Asn Thr Pro Leu Val Lys
        595   600   605

Ala Ser Gly Arg Glu Leu Cys Tyr Ile Leu Leu Phe Gly Val Ser Leu
        610   615   620

Ser Tyr Cys Met Thr Phe Phe Phe Ile Ala Lys Pro Ser Pro Val Ile
625   630   635   640

Cys Ala Leu Arg Arg Leu Gly Leu Gly Thr Ser Phe Ala Ile Cys Tyr
            645   650   655

Ser Ala Leu Leu Thr Lys Thr Asn Cys Ile Ala Arg Ile Phe Asp Gly
        660   665   670

Val Lys Asn Gly Ala Gln Arg Pro Lys Phe Ile Ser Pro Ser Ser Gln
        675   680   685

Val Phe Ile Cys Leu Gly Leu Ile Leu Val Gln Ile Val Met Val Ser
        690   695   700

Val Trp Leu Ile Leu Glu Thr Pro Gly Thr Arg Arg Tyr Thr Leu Pro
705   710   715   720

Glu Lys Arg Glu Thr Val Ile Leu Lys Cys Asn Val Lys Asp Ser Ser
                725   730   735

171

```
Met Leu Ile Ser Leu Thr Tyr Asp Val Val Leu Val Ile Leu Cys Thr
            740                 745                 750

Val Tyr Ala Phe Lys Thr Arg Lys Cys Pro Glu Asn Phe Asn Glu Ala
            755                 760                 765

Lys Phe Ile Gly Phe Thr Met Tyr Thr Thr Cys Ile Ile Trp Leu Ala
        770                 775                 780

Phe Leu Pro Ile Phe Tyr Val Thr Ser Ser Asp Tyr Arg Val Gln Thr
785                 790                 795                 800

Thr Thr Met Cys Ile Ser Val Ser Leu Ser Gly Phe Val Val Leu Gly
                805                 810                 815

Cys Leu Phe Ala Pro Lys Val His Ile Val Leu Phe Gln Pro Gln Lys
            820                 825                 830

Asn Val Val Thr His Arg Leu His Leu Asn Arg Phe Ser Val Ser Gly
            835                 840                 845

Thr Ala Thr Thr Tyr Ser Gln Ser Ser Ala Ser Thr Tyr Val Pro Thr
    850                 855                 860

Val Cys Asn Gly Arg Glu Val Leu Asp Ser Thr Thr Ser Ser Leu
865                 870                 875


<210> 55
<211> 442
<212> PRT
<213> Homo sapiens

<400> 55
Met Gly Leu Ala Met Glu His Gly Gly Ser Tyr Ala Arg Ala Gly Gly
    1               5                   10                  15

Ser Ser Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu Phe Val
            20                  25                  30

Ser Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe Met Val
        35                  40                  45

Tyr Gly Asn Val His Val Ser Thr Glu Ser Asn Leu Gln Ala Thr Glu
    50                  55                  60

Arg Arg Ala Glu Gly Leu Tyr Ser Gln Leu Leu Gly Leu Thr Ala Ser
65                  70                  75                  80

Gln Ser Asn Leu Thr Lys Glu Leu Asn Phe Thr Thr Arg Ala Lys Asp
            85                  90                  95

Ala Ile Met Gln Met Trp Leu Asn Ala Arg Arg Asp Leu Asp Arg Ile
        100                 105                 110

Asn Ala Ser Phe Arg Gln Cys Gln Gly Asp Arg Val Ile Tyr Thr Asn
        115                 120                 125
```

172

```
Asn His Arg Tyr Met Ala Ala Ile Ile Leu Ser Glu Lys Gln Cys Arg
    130             135             140

Asp Gln Phe Lys Asp Met Asn Lys Ser Cys Asp Ala Leu Leu Phe Met
145             150             155             160

Leu Asn Gln Lys Val Lys Thr Leu Glu Val Glu Ile Ala Lys Glu Lys
            165             170             175

Thr Ile Cys Thr Lys Asp Lys Glu Ser Val Leu Leu Asn Lys Arg Val
            180             185             190

Ala Glu Glu Gln Leu Val Glu Cys Val Lys Thr Arg Glu Leu Gln His
            195             200             205

Gln Glu Arg Gln Leu Ala Lys Glu Gln Leu Gln Lys Val Gln Ala Leu
    210             215             220

Cys Leu Pro Leu Asp Lys Asp Lys Phe Glu Met Asp Leu Arg Asn Leu
225             230             235             240

Trp Arg Asp Ser Ile Ile Pro Arg Ser Leu Asp Asn Leu Gly Tyr Asn
            245             250             255

Leu Tyr His Pro Leu Gly Ser Glu Leu Ala Ser Ile Arg Arg Ala Cys
            260             265             270

Asp His Met Pro Ser Leu Met Ser Ser Lys Val Glu Glu Leu Ala Arg
    275             280             285

Ser Leu Arg Ala Asp Ile Glu Arg Val Ala Arg Glu Asn Ser Asp Leu
    290             295             300

Gln Arg Gln Lys Leu Glu Ala Gln Gln Gly Leu Arg Ala Ser Gln Glu
305             310             315             320

Ala Lys Gln Lys Val Glu Lys Glu Ala Gln Ala Arg Glu Ala Lys Leu
            325             330             335

Gln Ala Glu Cys Ser Arg Gln Thr Gln Leu Ala Leu Glu Glu Lys Ala
    340             345             350

Val Leu Arg Lys Glu Arg Asp Asn Leu Ala Lys Glu Leu Glu Glu Lys
    355             360             365

Lys Arg Glu Ala Glu Gln Leu Arg Met Glu Leu Ala Ile Arg Asn Ser
    370             375             380

Ala Leu Asp Thr Cys Ile Lys Thr Lys Ser Gln Pro Met Met Pro Val
385             390             395             400

Ser Arg Pro Met Gly Pro Val Pro Asn Pro Gln Pro Ile Asp Pro Ala
            405             410             415

Ser Leu Glu Glu Phe Lys Arg Lys Ile Leu Glu Ser Gln Arg Pro Pro
    420             425             430
```

173

```
Ala Gly Ile Pro Val Ala Pro Ser Ser Gly
        435                 440


<210> 56
<211> 442
<212> PRT
<213> Homo sapiens

<400> 56
Met Gly Leu Ala Met Glu His Gly Gly Ser Tyr Ala Arg Ala Gly Gly
  1               5                  10                  15

Ser Ser Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu Phe Val
             20                  25                  30

Ser Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe Met Val
          35                  40                  45

Tyr Gly Asn Val His Val Ser Thr Glu Ser Asn Leu Gln Ala Thr Glu
      50                  55                  60

Arg Arg Ala Glu Gly Leu Tyr Ser Gln Leu Leu Gly Leu Thr Ala Ser
 65                  70                  75                  80

Gln Ser Asn Leu Thr Lys Glu Leu Asn Phe Thr Thr Arg Ala Lys Asp
                85                  90                  95

Ala Ile Met Gln Met Trp Leu Asn Ala Arg Arg Asp Leu Asp Arg Ile
            100                 105                 110

Asn Ala Ser Phe Arg Gln Cys Gln Gly Asp Arg Val Ile Tyr Thr Asn
            115                 120                 125

Asn Gln Arg Tyr Met Ala Ala Ile Ile Leu Ser Glu Lys Gln Cys Arg
      130                 135                 140

Asp Gln Phe Lys Asp Met Asn Lys Ser Cys Asp Ala Leu Leu Phe Met
145                 150                 155                 160

Leu Asn Gln Lys Val Lys Thr Leu Glu Val Glu Ile Ala Lys Glu Lys
                165                 170                 175

Thr Ile Cys Thr Lys Asp Lys Glu Ser Val Leu Leu Asn Lys Arg Val
            180                 185                 190

Ala Glu Glu Gln Leu Val Glu Cys Val Lys Thr Arg Glu Leu Gln His
            195                 200                 205

Gln Glu Arg Gln Leu Ala Lys Glu Gln Leu Gln Lys Val Gln Ala Leu
      210                 215                 220

Cys Leu Pro Leu Asp Lys Asp Lys Phe Glu Met Asp Leu Arg Asn Leu
225                 230                 235                 240

Trp Arg Asp Ser Ile Ile Pro Arg Ser Leu Asp Asn Leu Gly Tyr Asn
```

174

Leu Tyr His Pro Leu Gly Ser Glu Leu Ala Ser Ile Arg Arg Ala Cys
        260   265   270

Asp His Met Pro Ser Leu Met Ser Ser Lys Val Glu Glu Leu Ala Arg
        275   280   285

Ser Leu Arg Ala Asp Ile Glu Arg Val Ala Arg Glu Asn Ser Asp Leu
    290   295   300

Gln Arg Gln Lys Leu Glu Ala Gln Gln Gly Leu Arg Ala Ser Gln Glu
305   310   315   320

Ala Lys Gln Lys Val Glu Lys Glu Ala Gln Ala Arg Glu Ala Lys Leu
                325   330   335

Gln Ala Glu Cys Ser Arg Gln Thr Gln Leu Ala Leu Glu Glu Lys Ala
                340   345   350

Val Leu Arg Lys Glu Arg Asp Asn Leu Ala Lys Glu Leu Glu Glu Lys
        355   360   365

Lys Arg Glu Ala Glu Gln Leu Arg Met Glu Leu Ala Ile Arg Asn Ser
    370   375   380

Ala Leu Asp Thr Cys Ile Lys Thr Lys Ser Gln Pro Met Met Pro Val
385   390   395   400

Ser Arg Pro Met Gly Pro Val Pro Asn Pro Gln Pro Ile Asp Pro Ala
                405   410   415

Ser Leu Glu Glu Phe Lys Arg Lys Ile Leu Glu Ser Gln Arg Pro Pro
                420   425   430

Ala Gly Ile Pro Val Ala Pro Ser Ser Gly
        435   440

<210> 57
<211> 438
<212> PRT
<213> Rattus norvegicus

<400> 57
Met Gly Leu Ser Met Asp Arg Ser Pro Tyr Ser Arg Thr Gly Asp Arg
 1   5   10   15

Asp Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu Phe Val Ser
                20   25   30

Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe Met Ile Tyr
            35   40   45

Gly Asn Val His Ala Thr Thr Glu Ser Ser Leu Arg Ala Thr Glu Ile
    50   55   60

175

Arg Ala Asp Asn Leu Tyr Ser Gln Val Val Gly Leu Ser Ala Ala Gln
65   70   75   80

Ala Asn Leu Ser Lys Gln Leu Asn Ile Ser Thr Leu Val Lys Asp Thr
                85   90   95

Val Met Gln Gln Leu Leu Thr Thr Arg Arg Glu Val Glu Arg Ile Asn
            100   105   110

Ala Ser Phe Arg Gln Cys Gln Gly Asp Leu Ile Thr Tyr Ile Asn Tyr
            115   120   125

Asn Arg Phe Ile Ala Ala Ile Ile Leu Ser Glu Lys Gln Cys Gln Glu
    130   135   140

Gln Leu Lys Glu Gly Asn Lys Thr Cys Glu Ala Leu Leu Phe Lys Leu
145   150   155   160

Gly Glu Lys Val Lys Thr Leu Glu Met Glu Val Val Lys Glu Lys Ala
            165   170   175

Val Cys Ser Lys Asp Lys Asp Ser Leu Leu Ala Gly Lys Arg Gln Ala
            180   185   190

Glu Met Gln Gln Glu Ala Cys Gly Lys Ala Arg Glu Gln Gln Lys Gln
    195   200   205

Asp Gln Gln Val Thr Glu Glu Gln Leu Arg Lys Val Gln Ser Leu Cys
    210   215   220

Leu Pro Leu Asp Gln Glu Lys Phe Gln Ala Asp Val Leu Asn Val Trp
225   230   235   240

Arg Asp Ser Leu Val Tyr Arg Ser Leu Asp Asn Ile Gly Tyr His Tyr
            245   250   255

Ser Leu Met Pro Glu Phe Ser Ser Leu Arg Arg Thr Cys Glu Ser Leu
            260   265   270

Pro Gly Ile Met Thr Thr Lys Val Glu Glu Leu Ala Arg Gly Leu Arg
            275   280   285

Ala Gly Ile Glu Arg Val Thr Arg Glu Asn Gly Glu Leu Arg Arg Gln
    290   295   300

Lys Leu Glu Leu Glu Arg Ala Ile Gln Gly Glu Arg Glu Ala Arg Thr
305   310   315   320

Arg Ala Gly Thr Glu Ala Gln Ala Arg Glu Thr Gln Leu Arg Thr Glu
            325   330   335

Cys Ala Arg Gln Thr Gln Leu Ala Leu Glu Glu Lys Ala Ala Leu Arg
            340   345   350

Thr Gln Arg Asp Asp Leu Glu Arg Gln Leu Glu Ala Arg Lys Arg Glu
    355   360   365

```
Leu Glu Gln Leu Arg Thr Glu Val Asp Val Arg Ile Ser Ala Leu Asp
    370             375             380

Thr Cys Val Lys Ala Lys Ser Leu Pro Ala Ile Gln Pro Arg Leu Pro
385             390             395             400

Gly Pro Pro Pro Asn Pro Pro Pro Ile Asp Pro Ala Ser Leu Glu Glu
                405             410             415

Phe Lys Lys Arg Ile Leu Glu Ser Gln Arg Pro Pro Leu Val Asn Pro
                420             425             430

Ala Val Pro Pro Ser Gly
        435


<210> 58
<211> 438
<212> PRT
<213> Mus musculus

<400> 58
Met Gly Leu Ser Met Asp Arg Ser Pro Tyr Ala Arg Thr Gly Asp Gln
  1               5               10              15

Gln Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu Phe Val Ser
                20              25              30

Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe Met Ile Tyr
        35              40              45

Gly Asn Val His Ala Thr Thr Glu Ser Ser Leu Arg Ala Thr Glu Ile
    50              55              60

Arg Ala Asp Ser Leu Tyr Ser Gln Val Val Gly Leu Ser Ala Ser Gln
65              70              75              80

Ala Asn Leu Ser Lys Gln Leu Asn Ile Ser Leu Leu Val Lys Glu Thr
                85              90              95

Val Met Gln Gln Leu Leu Thr Thr Arg Arg Glu Met Glu Arg Ile Asn
            100             105             110

Ala Ser Phe Arg Gln Cys Gln Gly Asp Leu Ile Thr Tyr Ile Asn Tyr
            115             120             125

Asn Arg Phe Ile Ala Ala Ile Ile Leu Ser Glu Lys Gln Cys Gln Glu
    130             135             140

Gln Leu Lys Glu Val Asn Lys Thr Cys Glu Ala Leu Leu Phe Lys Leu
145             150             155             160

Gly Glu Lys Val Lys Thr Leu Glu Met Glu Val Ala Lys Glu Lys Ala
            165             170             175

Val Cys Ser Lys Asp Lys Glu Ser Leu Leu Ala Gly Lys Arg Gln Thr
            180             185             190
```

177

```
Glu Glu Gln Leu Glu Ala Cys Gly Lys Ala Arg Glu Arg Gln Gln Gln
        195                 200                 205

Glu Gln Gln Val Thr Glu Glu Asn Leu Arg Lys Val Gln Ser Leu Cys
        210                 215                 220

Ile Pro Leu Asp Gln Glu Lys Phe Gln Ala Asp Val Leu Ser Ala Trp
225                 230                 235                 240

Arg Asp Ser Leu Ile Tyr Arg Thr Leu Glu Thr Leu Pro Tyr His Tyr
                245                 250                 255

Gln Leu Met Pro Glu Tyr Ala Ser Leu Arg Arg Thr Cys Glu Ser Leu
        260                 265                 270

Pro Gly Ile Met Thr Thr Lys Ile Glu Glu Leu Ala Arg Gly Leu Arg
        275                 280                 285

Ala Gly Ile Glu Arg Val Thr Arg Glu Asn Ala Glu Leu Arg Arg Gln
        290                 295                 300

Lys Leu Glu Leu Glu Arg Ala Ala Gln Ala Ala Gln Glu Ala Arg Ala
305                 310                 315                 320

Arg Ala Gly Thr Glu Ala Gln Ala Arg Glu Thr Gln Leu Arg Ala Glu
                325                 330                 335

Cys Ala Arg Gln Thr Gln Leu Ala Leu Glu Glu Lys Ala Ala Leu Arg
                340                 345                 350

Ala Gln Arg Asp Asn Leu Glu Arg Glu Leu Glu Ala Arg Lys Arg Glu
        355                 360                 365

Leu Glu Gln Leu Arg Thr Glu Val Asp Val Arg Ile Ser Ala Leu Asp
        370                 375                 380

Thr Cys Val Lys Ala Lys Ser Leu Pro Ala Val Pro Pro Arg Val Ser
385                 390                 395                 400

Gly Pro Pro Pro Asn Pro Pro Pro Ile Asp Pro Ala Ser Leu Glu Glu
                405                 410                 415

Phe Lys Lys Arg Ile Leu Glu Ser Gln Arg Leu Pro Val Val Asn Pro
                420                 425 ·               430

Ala Ala Gln Pro Ser Gly
        435


<210> 59
<211> 438
<212> PRT
<213> Mus musculus

<400> 59
Met Gly Leu Ser Met Asp Arg Ser Pro Tyr Ala Arg Thr Gly Asp Gln
```

178

```
        1                   5                   10                  15

    Gln Arg Gly Cys Trp Tyr Tyr Leu Arg Tyr Phe Phe Leu Phe Val Ser
                20              25              30

    Leu Ile Gln Phe Leu Ile Ile Leu Gly Leu Val Leu Phe Met Ile Tyr
                35              40              45

    Gly Asn Val His Ala Thr Thr Glu Ser Ser Leu Arg Ala Thr Glu Ile
            50              55              60

    Arg Ala Asp Ser Leu Tyr Ser Gln Val Val Gly Leu Ser Ala Ser Gln
    65              70              75              80

    Ala Asn Leu Ser Lys Gln Leu Asn Ile Ser Leu Leu Val Lys Glu Thr
                85              90              95

    Val Met Gln Gln Leu Leu Thr Thr Arg Arg Glu Met Glu Arg Ile Asn
                100             105             110

    Ala Ser Phe Arg Gln Cys Gln Gly Asp Leu Ile Thr Tyr Ile Asn Tyr
                115             120             125

    Asn Arg Phe Ile Ala Ala Ile Ile Leu Ser Glu Lys Gln Cys Gln Glu
        130             135             140

    Gln Leu Lys Glu Val Asn Lys Thr Cys Glu Ala Leu Leu Phe Lys Leu
    145             150             155             160

    Gly Glu Lys Val Lys Thr Leu Glu Met Glu Val Ala Lys Glu Lys Ala
                165             170             175

    Val Cys Ser Lys Asp Lys Glu Ser Leu Leu Ala Gly Lys Arg Gln Ala
                180             185             190

    Glu Glu Gln Leu Glu Ala Cys Gly Lys Ala Arg Glu Arg Gln Gln Gln
                195             200             205

    Glu Gln Gln Val Thr Glu Glu Asn Leu Arg Lys Val Gln Ser Leu Cys
        210             215             220

    Ile Pro Leu Asp Gln Glu Lys Phe Gln Ala Asp Val Leu Ser Ala Trp
    225             230             235             240

    Arg Asp Ser Leu Ile Tyr Arg Thr Leu Glu Thr Leu Pro Tyr His Tyr
                245             250             255

    Gln Leu Met Pro Glu Tyr Ala Ser Leu Arg Arg Thr Cys Glu Ser Leu
                260             265             270

    Pro Gly Ile Met Pro Pro Lys Ile Glu Glu Met Ala Arg Gly Val Arg
                275             280             285

    Ala Gly Ile Glu Arg Val Thr Arg Glu Asn Ala Glu Leu Arg Arg Gln
        290             295             300

    Lys Leu Glu Leu Glu Arg Ala Ala Gln Arg Ala Gln Glu Ala Arg Ala
```

Arg Ala Gly Thr Glu Ala Gln Ala Arg Glu Thr Gln Leu Arg Ala Glu
            325   330   335

Cys Ala Arg Gln Thr Gln Leu Ala Leu Glu Glu Lys Ala Ala Leu Arg
            340   345   350

Ala Gln Arg Asp Asn Leu Glu Arg Glu Leu Glu Ala Arg Lys Arg Glu
            355   360   365

Leu Glu Gln Leu Arg Thr Glu Val Asp Val Arg Ile Ser Ala Leu Asp
    370   375   380

Thr Cys Val Lys Ala Lys Ser Leu Pro Ala Val Pro Pro Arg Val Ser
385   390   395   400

Gly Pro Pro Pro Asn Pro Pro Pro Ile Asp Pro Ala Ser Leu Glu Glu
            405   410   415

Phe Lys Lys Arg Ile Leu Glu Ser Gln Arg Leu Pro Val Val Asn Pro
            420   425   430

Ala Ala Gln Pro Ser Gly
            435

<210> 60
<211> 1788
<212> PRT
<213> Rattus norvegicus

<400> 60
Met Leu Arg Pro Met Gln Pro Thr Ser Arg Thr Leu Gln Arg Pro Pro
    1   5   10   15

Arg Gly Ala Leu Glu Ala Gly Gly Arg Arg Asn Cys Gln Asp Gln Val
            20   25   30

Ala His Pro Asn Trp Asn Thr Gln Ser Val Gln Thr Pro Arg Val Arg
            35   40   45

Arg Thr Leu Gly Ala Pro Val Pro Pro Ser Arg Lys Val Lys Ala Trp
    50   55   60

Ala Pro Gly Thr Asp Gln Trp Pro Gly Val Ser Pro His Cys Lys Arg
65   70   75   80

Ser Glu Ala Glu Ala Lys Pro Ser Gly Ser Gln Thr Val Asn Leu Thr
            85   90   95

Gly Arg Ala Asn Asp Pro Cys Asp Leu Asp Ser Arg Val Gln Ala Thr
            100   105   110

Ser Val Lys Val Thr Val Ala Gly Phe Gln Pro Gly Gly Ala Val Glu
            115   120   125

```
Lys Leu Cys Gln Glu Ser Leu Gly Lys Leu Thr Thr Gly Asp Ala Cys
    130                 135             140

Val Ser Thr Ser Cys Glu Leu Ala Ser Ala Leu Ser His Leu Asp Ala
145                 150             155                 160

Ser His Leu Thr Glu Asn Leu Pro Lys Ala Ala Ser Glu Leu Gly Gln
                165             170                 175

Gln Pro Met Thr Ser Ser Asp Leu Ile Ser Ser Pro Gly Lys Lys Gly
            180             185             190

Ala Ala His Pro Asp Pro Ser Lys Thr Ser Val Asp Thr Gly Gln Val
        195             200             205

Ser Arg Pro Glu Asn Pro Ser Gln Pro Ala Ser Pro Arg Val Thr Lys
    210             215             220

Cys Lys Ala Arg Ser Pro Val Arg Leu Pro His Glu Gly Ser Pro Ser
225             230             235             240

Pro Gly Glu Lys Ala Ala Ala Pro Pro Asp Tyr Ser Lys Thr Arg Ser
            245             250             255

Ala Ser Glu Thr Ser Thr Pro His Asn Thr Arg Arg Val Ala Ala Leu
            260             265             270

Arg Gly Ala Gly Pro Gly Ala Glu Gly Met Thr Pro Ala Gly Ala Val
    275             280             285

Leu Pro Gly Asp Pro Leu Thr Ser Gln Glu Gln Arg Gln Gly Ala Pro
    290             295             300

Gly Asn His Ser Lys Ala Leu Glu Met Thr Gly Ile His Ala Pro Glu
305             310             315             320

Ser Ser Gln Glu Pro Ser Leu Leu Glu Gly Ala Asp Ser Val Ser Ser
            325             330             335

Arg Ala Pro Gln Ala Ser Leu Ser Met Leu Pro Ser Thr Asp Asn Thr
        340             345             350

Lys Glu Ala Cys Gly His Val Ser Gly His Cys Cys Pro Gly Gly Ser
    355             360             365

Arg Glu Ser Pro Val Thr Asp Ile Asp Ser Phe Ile Lys Glu Leu Asp
    370             375             380

Ala Ser Ala Ala Arg Ser Pro Ser Ser Gln Thr Gly Asp Ser Gly Ser
385             390             395             400

Gln Glu Gly Ser Ala Gln Gly His Pro Pro Ala Gly Ala Gly Gly Gly
            405             410             415

Ser Ser Cys Arg Ala Glu Pro Val Pro Gly Gly Gln Thr Ser Ser Pro
            420             425             430
```

181

```
Arg Arg Ala Trp Ala Ala Gly Ala Pro Ala Tyr Pro Gln Trp Ala Ser
        435                 440             445

Gln Pro Ser Val Leu Asp Ser Ile Asn Pro Asp Lys His Phe Thr Val
        450                 455             460

Asn Lys Asn Phe Leu Ser Asn Tyr Ser Arg Asn Phe Ser Ser Phe His
465                 470             475                 480

Glu Asp Ser Thr Ser Leu Ser Gly Leu Gly Asp Ser Thr Glu Pro Ser
            485             490             495

Leu Ser Ser Met Tyr Gly Asp Ala Glu Asp Ser Ser Ser Asp Pro Glu
            500             505             510

Ser Leu Thr Glu Ala Pro Arg Ala Ser Ala Arg Asp Gly Trp Ser Pro
        515             520             525

Pro Arg Ser Arg Val Ser Leu His Lys Glu Asp Pro Ser Glu Ser Glu
        530             535             540

Glu Glu Gln Ile Glu Ile Cys Ser Thr Arg Gly Cys Pro Asn Pro Pro
545             550             555             560

Ser Ser Pro Ala His Leu Pro Thr Gln Ala Ala Ile Cys Pro Ala Ser
            565             570             575

Ala Lys Val Leu Ser Leu Lys Tyr Ser Thr Pro Arg Glu Ser Val Ala
            580             585             590

Ser Pro Arg Glu Lys Ala Ala Cys Leu Pro Gly Ser Tyr Thr Ser Gly
        595             600             605

Pro Asp Ser Ser Gln Pro Ser Ser Leu Leu Glu Met Ser Ser Gln Glu
        610             615             620

His Glu Thr His Ala Asp Ile Ser Thr Ser Gln Asn His Arg Pro Ser
625             630             635             640

Cys Ala Glu Glu Thr Thr Glu Val Thr Ser Ala Ser Ser Ala Met Glu
            645             650             655

Asn Ser Pro Leu Ser Lys Val Ala Arg His Phe His Ser Pro Pro Ile
        660             665             670

Ile Leu Ser Ser Pro Asn Met Val Asn Gly Leu Glu His Asp Leu Leu
        675             680             685

Asp Asp Glu Thr Leu Asn Gln Tyr Glu Thr Ser Ile Asn Ala Ala Ala
        690             695             700

Ser Leu Ser Ser Phe Ser Val Asp Val Pro Lys Asn Gly Glu Ser Val
705             710             715             720

Leu Glu Asn Leu His Ile Ser Glu Ser Gln Asp Leu Asp Asp Leu Leu
            725             730             735
```

```
Gln Lys Pro Lys Met Ile Ala Arg Arg Pro Ile Met Ala Trp Phe Lys
        740                 745                 750

Glu Ile Asn Lys His Asn Gln Gly Thr His Leu Arg Ser Lys Thr Glu
        755                 760                 765

Lys Glu Gln Pro Leu Met Pro Ala Arg Ser Pro Asp Ser Lys Ile Gln
    770                 775                 780

Met Val Ser Ser Ser Gln Lys Lys Gly Val Thr Val Pro His Ser Pro
785                 790                 795                 800

Pro Gln Pro Lys Thr Asn Leu Glu Asn Lys Asp Leu Ser Lys Lys Ser
                805                 810                 815

Pro Ala Glu Met Leu Leu Thr Asn Gly Gln Lys Ala Lys Cys Gly Pro
                820                 825                 830

Lys Leu Lys Arg Leu Ser Leu Lys Gly Lys Ala Lys Val Asn Ser Glu
        835                 840                 845

Ala Pro Ala Ala Asn Ala Val Lys Ala Gly Gly Thr Asp His Arg Lys
    850                 855                 860

Pro Leu Ile Ser Pro Gln Thr Ser His Lys Thr Leu Ser Lys Ala Val
865                 870                 875                 880

Ser Gln Arg Leu His Val Ala Asp His Glu Asp Pro Asp Arg Asn Thr
                885                 890                 895

Thr Ala Ala Pro Arg Ser Pro Gln Cys Val Leu Glu Ser Lys Pro Pro
                900                 905                 910

Leu Ala Thr Ser Gly Pro Leu Lys Pro Ser Val Ser Asp Thr Ser Ile
        915                 920                 925

Arg Thr Phe Val Ser Pro Leu Thr Ser Pro Lys Pro Val Pro Glu Gln
    930                 935                 940

Gly Met Trp Ser Arg Phe His Met Ala Val Leu Ser Glu Pro Asp Arg
945                 950                 955                 960

Gly Cys Pro Thr Thr Pro Lys Ser Pro Lys Cys Arg Ala Glu Gly Arg
                965                 970                 975

Ala Pro Arg Ala Asp Ser Gly Pro Val Ser Pro Ala Ala Ser Arg Asn
                980                 985                 990

Gly Met Ser Val Ala Gly Asn Arg Gln Ser Glu Pro Arg Leu Ala Ser
        995                 1000                1005

His Val Ala Ala Asp Thr Ala Gln Pro Arg Pro Thr Gly Glu Lys Gly
    1010                1015                1020

Gly Asn Ile Met Ala Ser Asp Arg Leu Glu Arg Thr Asn Gln Leu Lys
1025                1030                1035                1040
```

```
Ile Val Glu Ile Ser Ala Glu Ala Val Ser Glu Thr Val Cys Gly Asn
            1045                1050                1055

Lys Pro Ala Glu Ser Asp Arg Arg Gly Gly Cys Leu Ala Gln Gly Asn
            1060                1065                1070

Cys Gln Glu Lys Ser Glu Ile Arg Leu Tyr Arg Gln Val Ala Glu Ser
         1075                1080                1085

Ser Thr Ser His Pro Ser Ser Leu Pro Ser His Ala Ser Gln Ala Glu
        1090                1095                1100

Gln Glu Met Ser Arg Ser Phe Ser Met Ala Lys Leu Ala Ser Ser Ser
1105                1110                1115                1120

Ser Ser Leu Gln Thr Ala Ile Arg Lys Ala Glu Tyr Ser Gln Gly Lys
            1125                1130                1135

Ser Ser Leu Met Ser Asp Ser Arg Gly Val Pro Arg Asn Ser Ile Pro
            1140                1145                1150

Gly Gly Pro Ser Gly Glu Asp His Leu Tyr Phe Thr Pro Arg Pro Ala
            1155                1160                1165

Thr Arg Thr Tyr Ser Met Pro Ala Gln Phe Ser Ser His Phe Gly Arg
        1170                1175                1180

Glu Gly His Pro Pro His Ser Leu Gly Arg Ser Arg Asp Ser Gln Val
1185                1190                1195                1200

Pro Val Thr Ser Ser Val Val Pro Glu Ala Lys Ala Ser Arg Gly Gly
            1205                1210                1215

Leu Pro Ser Leu Ala Asn Gly Gln Gly Ile Tyr Ser Val Lys Pro Leu
            1220                1225                1230

Leu Asp Thr Ser Arg Asn Leu Pro Ala Thr Asp Glu Gly Asp Ile Ile
        1235                1240                1245

Ser Val Gln Glu Thr Ser Cys Leu Val Thr Asp Lys Ile Lys Val Thr
        1250                1255                1260

Arg Arg His Tyr Cys Tyr Glu Gln Asn Trp Pro His Glu Ser Thr Ser
1265                1270                1275                1280

Phe Phe Ser Val Lys Gln Arg Ile Lys Ser Phe Glu Asn Leu Ala Asn
            1285                1290                1295

Ala Asp Arg Pro Val Ala Lys Ser Gly Ala Ser Pro Phe Leu Ser Val
        1300                1305                1310

Ser Ser Lys Pro Pro Ile Gly Arg Arg Ser Ser Gly Ser Ile Val Ser
        1315                1320                1325

Gly Ser Leu Gly His Pro Gly Asp Ala Ala Ala Arg Leu Leu Arg Arg
        1330                1335                1340
```

Ser Leu Ser Ser Cys Ser Glu Asn Gln Ser Glu Ala Gly Thr Leu Leu
1345   1350   1355   1360

Pro Gln Met Ala Lys Ser Pro Ser Ile Met Thr Leu Thr Ile Ser Arg
               1365   1370   1375

Gln Asn Pro Pro Glu Thr Ser Ser Lys Gly Ser Asp Ser Glu Leu Lys
            1380   1385   1390

Lys Ser Leu Gly Pro Leu Gly Ile Pro Thr Pro Thr Met Thr Leu Ala
          1395   1400   1405

Ser Pro Val Lys Arg Asn Lys Ser Ser Val Arg His Thr Gln Pro Ser
     1410   1415   1420

Pro Val Ser Arg Ser Lys Leu Gln Glu Leu Arg Ala Leu Ser Met Pro
1425   1430   1435   1440

Asp Leu Asp Lys Leu Cys Ser Glu Asp Tyr Ser Ala Gly Pro Ser Ala
               1445   1450   1455

Val Leu Phe Lys Thr Glu Leu Glu Ile Thr Pro Arg Arg Ser Pro Gly
          1460   1465   1470

Pro Pro Ala Gly Gly Val Ser Cys Pro Glu Lys Gly Gly Asn Arg Ala
          1475   1480   1485

Cys Pro Gly Gly Ser Gly Pro Lys Thr Ser Ala Ala Glu Thr Pro Ser
     1490   1495   1500

Ser Ala Ser Asp Thr Gly Glu Ala Ala Gln Asp Leu Pro Phe Arg Arg
1505   1510   1515   1520

Ser Trp Ser Val Lys Leu Asp Gln Leu Leu Val Ser Ala Gly Asp Gln
               1525   1530   1535

Gln Arg Leu Gln Ser Val Leu Ser Ser Val Gly Ser Lys Ser Thr Ile
          1540   1545   1550

Leu Thr Leu Ile Gln Glu Ala Lys Ala Gln Ser Glu Asn Glu Glu Asp
          1555   1560   1565

Val Cys Phe Ile Val Leu Asn Arg Lys Glu Gly Ser Gly Leu Gly Phe
     1570   1575   1580

Ser Val Ala Gly Gly Thr Asp Val Glu Pro Lys Ser Ile Thr Val His
1585   1590   1595   1600

Arg Val Phe Ser Gln Gly Ala Ala Ser Gln Glu Gly Thr Met Asn Arg
               1605   1610   1615

Gly Asp Phe Leu Leu Ser Val Asn Gly Ala Ser Leu Ala Gly Leu Ala
               1620   1625   1630

His Gly Asn Val Leu Lys Val Leu His Gln Ala Gln Leu His Lys Asp
     1635   1640   1645

185

```
Ala Leu Val Val Ile Lys Lys Gly Met Asp Gln Pro Arg Pro Ser Ala
    1650            1655            1660

Arg Gln Glu Pro Pro Thr Ala Asn Gly Lys Gly Leu Leu Ser Arg Lys
1665            1670            1675            1680

Thr Ile Pro Leu Glu Pro Gly Ile Gly Arg Ser Val Ala Val His Asp
            1685            1690            1695

Ala Leu Cys Val Glu Val Leu Lys Thr Ser Ala Gly Leu Gly Leu Ser
            1700            1705            1710

Leu Asp Gly Gly Lys Ser Ser Val Thr Gly Asp Gly Pro Leu Val Ile
        1715            1720            1725

Lys Arg Val Tyr Lys Gly Gly Ala Ala Glu Gln Ala Gly Ile Ile Glu
    1730            1735            1740

Ala Gly Asp Glu Ile Leu Ala Ile Asn Gly Lys Pro Leu Val Gly Leu
1745            1750            1755            1760

Met His Phe Asp Ala Trp Asn Ile Met Lys Ser Val Pro Glu Gly Pro
            1765            1770            1775

Val Gln Leu Leu Ile Arg Lys His Arg Asn Ser Ser
        1780            1785
```

```
<210> 61
<211> 1608
<212> PRT
<213> Homo sapiens

<400> 61
Ser Ser Asp Leu Ile Ser Ser Pro Gly Lys Lys Gly Ala Ala His Pro
  1             5               10              15

Asp Pro Ser Lys Thr Ser Val Asp Thr Gly Lys Val Ser Arg Pro Glu
            20              25              30

Asn Pro Ser Gln Pro Ala Ser Pro Arg Val Ala Lys Cys Lys Ala Arg
        35              40              45

Ser Pro Val Arg Leu Pro His Glu Gly Ser Pro Ser Pro Gly Glu Lys
    50              55              60

Ala Ala Ala Pro Pro Asp Tyr Ser Lys Thr Arg Ser Ala Ser Glu Thr
65              70              75              80

Ser Thr Pro His Asn Thr Arg Arg Val Ala Ala Leu Arg Gly Ala Gly
            85              90              95

Pro Gly Ala Glu Gly Met Thr Pro Ala Gly Ala Val Leu Pro Gly Asp
            100             105             110

Pro Leu Thr Ser Gln Glu Gln Arg Gln Gly Ala Pro Gly Asn His Ser
        115             120             125
```

186

```
Lys Ala Leu Glu Met Thr Gly Ile His Ala Pro Glu Ser Ser Gln Glu
    130              135              140

Pro Ser Leu Leu Glu Gly Ala Asp Ser Val Ser Ser Arg Ala Pro Gln
145              150              155              160

Ala Ser Leu Ser Met Leu Pro Ser Thr Asp Asn Thr Lys Glu Ala Cys
                165              170              175

Gly His Val Ser Gly His Cys Cys Pro Gly Gly Ser Arg Glu Ser Pro
            180              185              190

Val Thr Asp Ile Asp Ser Phe Ile Lys Glu Leu Asp Ala Ser Ala Ala
        195              200              205

Arg Ser Pro Ser Ser Gln Thr Gly Asp Ser Gly Ser Gln Glu Gly Ser
    210              215              220

Ala Gln Gly His Pro Pro Ala Gly Ala Gly Gly Ser Ser Cys Arg
225              230              235              240

Ala Glu Pro Val Pro Gly Gly Gln Thr Ser Ser Pro Arg Arg Ala Trp
            245              250              255

Ala Ala Gly Ala Pro Ala Tyr Pro Gln Trp Ala Ser Gln Pro Ser Val
            260              265              270

Leu Asp Ser Ile Asn Pro Asp Lys His Phe Thr Val Asn Lys Asn Phe
    275              280              285

Leu Ser Asn Tyr Ser Arg Asn Phe Ser Ser Phe His Glu Asp Ser Thr
    290              295              300

Ser Leu Ser Gly Leu Gly Asp Ser Thr Glu Pro Ser Leu Ser Ser Met
305              310              315              320

Tyr Gly Asp Ala Glu Asp Ser Ser Ser Asp Pro Glu Ser Leu Thr Glu
            325              330              335

Ala Pro Arg Ala Ser Ala Arg Asp Gly Trp Ser Pro Pro Arg Ser Arg
            340              345              350

Val Ser Leu His Lys Glu Asp Pro Ser Glu Ser Glu Glu Glu Gln Ile
    355              360              365

Glu Ile Cys Ser Thr Arg Gly Cys Pro Asn Pro Pro Ser Ser Pro Ala
    370              375              380

His Leu Pro Thr Gln Ala Ala Ile Cys Pro Ala Ser Ala Lys Val Leu
385              390              395              400

Ser Leu Lys Tyr Ser Thr Pro Arg Glu Ser Val Ala Ser Pro Arg Glu
            405              410              415

Lys Val Ala Cys Leu Pro Gly Ser Tyr Thr Ser Gly Pro Asp Ser Ser
            420              425              430
```

187

```
Gln Pro Ser Ser Leu Leu Glu Met Ser Ser Gln Glu His Glu Thr His
    435             440         445

Ala Asp Ile Ser Thr Ser Gln Asn His Arg Pro Ser Cys Ala Glu Glu
    450             455         460

Thr Thr Glu Val Thr Ser Ala Ser Ser Ala Met Glu Asn Ser Pro Leu
465             470         475             480

Ser Lys Val Ala Arg His Phe His Ser Pro Pro Ile Ile Leu Ser Ser
            485             490             495

Pro Asn Met Val Asn Gly Leu Glu His Asp Leu Leu Asp Asp Glu Thr
    500             505         510

Leu Asn Gln Tyr Glu Thr Ser Ile Asn Ala Ala Ala Ser Leu Ser Ser
    515             520         525

Phe Ser Val Asp Val Pro Lys Asn Gly Glu Ser Val Leu Glu Asn Leu
    530             535         540

His Ile Ser Glu Ser Gln Asp Leu Asp Asp Leu Leu Gln Lys Pro Lys
545             550         555             560

Met Ile Ala Arg Arg Pro Ile Met Ala Trp Phe Lys Glu Ile Asn Lys
            565         570             575

His Asn Gln Gly Thr His Leu Arg Ser Lys Thr Glu Lys Glu Gln Pro
        580             585             590

Leu Met Pro Ala Arg Ser Pro Asp Ser Lys Ile Gln Met Val Ser Ser
    595             600         605

Ser Gln Lys Lys Gly Val Thr Val Pro His Ser Pro Pro Gln Pro Lys
    610             615         620

Thr Asn Leu Glu Asn Lys Asp Leu Ser Lys Lys Ser Pro Ala Glu Met
625             630         635             640

Leu Leu Thr Asn Gly Gln Lys Ala Lys Cys Gly Pro Lys Leu Lys Arg
            645         650             655

Leu Ser Leu Lys Gly Lys Ala Lys Val Asn Ser Glu Ala Pro Ala Ala
            660         665         670

Asn Ala Val Lys Ala Gly Gly Thr Asp His Arg Lys Pro Leu Ile Ser
        675         680         685

Pro Gln Thr Ser His Lys Thr Leu Ser Lys Ala Val Ser Gln Arg Leu
    690             695         700

His Val Ala Asp His Glu Asp Pro Asp Arg Asn Thr Thr Ala Ala Pro
705             710         715             720

Arg Ser Pro Gln Cys Val Leu Glu Ser Lys Pro Pro Leu Ala Thr Ser
            725             730         735


                              188
```

```
Gly Pro Leu Lys Pro Ser Val Ser Asp Thr Ser Ile Arg Thr Phe Val
        740             745                 750

Ser Pro Leu Thr Ser Pro Lys Pro Val Pro Glu Gln Gly Met Trp Ser
        755             760                 765

Arg Phe His Met Ala Val Leu Ser Glu Pro Asp Arg Gly Cys Pro Thr
    770             775                 780

Thr Pro Lys Ser Pro Lys Cys Arg Ala Glu Gly Arg Ala Pro Arg Ala
785             790                 795                 800

Asp Ser Gly Pro Val Ser Pro Ala Ala Ser Arg Asn Gly Met Ser Val
            805             810                 815

Ala Gly Asn Arg Gln Ser Glu Pro Arg Leu Ala Ser His Val Ala Ala
        820                 825                 830

Asp Thr Ala Gln Pro Arg Pro Thr Gly Glu Lys Gly Gly Asn Ile Met
        835             840                 845

Ala Ser Asp Arg Leu Glu Arg Thr Asn Gln Leu Lys Ile Val Glu Ile
    850             855                 860

Ser Ala Glu Ala Val Ser Glu Thr Val Cys Gly Asn Lys Pro Ala Glu
865             870                 875                 880

Ser Asp Arg Arg Gly Gly Cys Leu Ala Gln Gly Asn Cys Gln Glu Lys
            885             890                 895

Ser Glu Ile Arg Leu Tyr Arg Gln Val Ala Glu Ser Ser Thr Ser His
        900             905                 910

Pro Ser Ser Leu Pro Ser His Ala Ser Gln Ala Glu Gln Glu Met Ser
        915             920                 925

Arg Ser Phe Ser Met Ala Lys Leu Ala Ser Ser Ser Ser Ser Leu Gln
    930             935                 940

Thr Ala Ile Arg Lys Ala Glu Tyr Ser Gln Gly Lys Ser Ser Leu Met
945             950                 955                 960

Ser Asp Ser Arg Gly Val Pro Arg Asn Ser Ile Pro Gly Gly Pro Ser
            965             970                 975

Gly Glu Asp His Leu Tyr Phe Thr Pro Arg Pro Ala Thr Arg Thr Tyr
        980             985                 990

Ser Met Pro Ala Gln Phe Ser Ser His Phe Gly Arg Glu Gly His Pro
        995             1000                1005

Pro His Ser Leu Gly Arg Ser Arg Asp Ser Gln Val Pro Val Thr Ser
    1010            1015                1020

Ser Val Val Pro Glu Ala Lys Ala Ser Arg Gly Gly Leu Pro Ser Leu
1025            1030                1035                1040
```

189

```
Ala Asn Gly Gln Gly Ile Tyr Ser Val Lys Pro Leu Leu Asp Thr Ser
          1045                1050                1055

Arg Asn Leu Pro Ala Thr Asp Glu Gly Asp Ile Ile Ser Val Gln Glu
          1060                1065                1070

Thr Ser Cys Leu Val Thr Asp Lys Ile Lys Val Thr Arg Arg His Tyr
          1075                1080                1085

Cys Tyr Glu Gln Asn Trp Pro His Glu Ser Thr Ser Phe Phe Ser Val
          1090                1095                1100

Lys Gln Arg Ile Lys Ser Phe Glu Asn Leu Ala Asn Ala Asp Arg Pro
1105                1110                1115                1120

Val Ala Lys Ser Gly Ala Ser Pro Phe Leu Ser Val Ser Ser Lys Pro
          1125                1130                1135

Pro Ile Gly Arg Arg Ser Ser Gly Ser Ile Val Ser Gly Ser Leu Gly
          1140                1145                1150

His Pro Gly Asp Ala Ala Ala Arg Leu Leu Arg Arg Ser Leu Ser Ser
          1155                1160                1165

Cys Ser Glu Asn Gln Ser Glu Ala Gly Thr Leu Leu Pro Gln Met Ala
     1170                1175                1180

Lys Ser Pro Ser Ile Met Thr Leu Thr Ile Ser Arg Gln Asn Pro Pro
1185                1190                1195                1200

Glu Thr Ser Ser Lys Gly Ser Asp Ser Glu Leu Lys Lys Ser Leu Gly
          1205                1210                1215

Pro Leu Gly Ile Pro Thr Pro Thr Met Thr Leu Ala Ser Pro Val Lys
          1220                1225                1230

Arg Asn Lys Ser Ser Val Arg His Thr Gln Pro Ser Pro Val Ser Arg
          1235                1240                1245

Ser Lys Leu Gln Glu Leu Arg Ala Leu Ser Met Pro Asp Leu Asp Lys
     1250                1255                1260

Leu Cys Ser Glu Asp Tyr Ser Ala Gly Pro Ser Ala Val Leu Phe Lys
1265                1270                1275                1280

Thr Glu Leu Glu Ile Thr Pro Arg Arg Ser Pro Gly Pro Pro Ala Gly
          1285                1290                1295

Gly Val Ser Cys Pro Glu Lys Gly Gly Asn Arg Ala Cys Pro Gly Gly
          1300                1305                1310

Ser Gly Pro Lys Thr Ser Ala Ala Glu Thr Pro Ser Ser Ala Ser Asp
          1315                1320                1325

Thr Gly Glu Ala Ala Gln Asp Leu Pro Phe Arg Arg Ser Trp Ser Val
          1330                1335                1340
```

190

```
Asn Leu Asp Gln Leu Leu Val Ser Ala Gly Asp Gln Gln Arg Leu Gln
1345                1350                1355                1360

Ser Val Leu Ser Ser Val Gly Ser Lys Ser Thr Ile Leu Thr Leu Ile
            1365                1370                1375

Gln Glu Ala Lys Ala Gln Ser Glu Asn Glu Glu Asp Val Cys Phe Ile
        1380                1385                1390

Val Leu Asn Arg Lys Glu Gly Ser Gly Leu Gly Phe Ser Val Ala Gly
        1395                1400                1405

Gly Thr Asp Val Glu Pro Lys Ser Ile Thr Val His Arg Val Phe Ser
    1410                1415                1420

Gln Gly Ala Ala Ser Gln Glu Gly Thr Met Asn Arg Gly Asp Phe Leu
1425                1430                1435                1440

Leu Ser Val Asn Gly Ala Ser Leu Ala Gly Leu Ala His Gly Asn Val
            1445                1450                1455

Leu Lys Val Leu His Gln Ala Gln Leu His Lys Asp Ala Leu Val Val
            1460                1465                1470

Ile Lys Lys Gly Met Asp Gln Pro Arg Pro Ser Ala Arg Gln Glu Pro
        1475                1480                1485

Pro Thr Ala Asn Gly Lys Gly Leu Leu Ser Arg Lys Thr Ile Pro Leu
    1490                1495                1500

Glu Pro Gly Ile Gly Arg Ser Val Ala Val His Asp Ala Leu Cys Val
1505                1510                1515                1520

Glu Val Leu Lys Thr Ser Ala Gly Leu Gly Leu Ser Leu Asp Gly Gly
            1525                1530                1535

Lys Ser Ser Val Thr Gly Asp Gly Pro Leu Val Ile Lys Arg Val Tyr
            1540                1545                1550

Lys Gly Gly Ala Ala Glu Gln Ala Gly Ile Ile Glu Ala Gly Asp Glu
            1555                1560                1565

Ile Leu Ala Ile Asn Gly Lys Pro Leu Val Gly Leu Met His Phe Asp
    1570                1575                1580

Ala Trp Asn Ile Met Lys Ser Val Pro Glu Gly Pro Val Gln Leu Leu
1585                1590                1595                1600

Ile Arg Lys His Arg Asn Ser Ser
            1605


<210> 62
<211> 2766
<212> PRT
<213> Rattus norvegicus
```

<400> 62

```
Met Pro Ile Thr Gln Asp Asn Ala Leu Leu His Leu Pro Leu Leu Tyr
  1               5                  10                  15

Glu Trp Leu Gln Asn Ser Leu Arg Glu Gly Gly Asp Ser Pro Glu Gln
              20                  25                  30

Arg Leu Cys Gln Ala Ala Ile Gln Lys Leu Gln Glu Tyr Ile Gln Leu
              35                  40                  45

Asn Leu Ala Val Asp Glu Ser Thr Val Pro Pro Asp His Ser Pro Pro
       50                  55                  60

Glu Met Glu Ile Cys Thr Val Tyr Leu Thr Lys Gln Leu Gly Asp Thr
 65                  70                  75                  80

Glu Thr Val Gly Leu Ser Phe Gly Asn Ile Pro Val Phe Gly Asp Tyr
                  85                  90                  95

Gly Glu Lys Arg Arg Gly Gly Lys Lys Arg Lys Thr His Gln Gly Pro
              100                 105                 110

Val Leu Asp Val Gly Cys Ile Trp Val Thr Glu Leu Arg Lys Asn Ser
              115                 120                 125

Pro Ala Gly Lys Ser Gly Lys Val Arg Leu Arg Asp Glu Ile Leu Ser
       130                 135                 140

Leu Asn Gly Gln Leu Met Val Gly Val Asp Val Thr Gly Ala Ser Tyr
145                 150                 155                 160

Leu Ala Glu Gln Cys Trp Asn Gly Gly Phe Ile Tyr Leu Ile Met Leu
              165                 170                 175

Arg Arg Phe Lys Gln Lys Ala His Val Thr Tyr Asn Gly Asn Ser Gly
              180                 185                 190

Asn Ser Ser Glu Pro Gly Glu Thr Pro Thr Leu Glu Leu Gly Asp Gln
       195                 200                 205

Thr Ser Lys Lys Gly Lys Arg Thr Arg Lys Phe Gly Val Ile Ser Arg
       210                 215                 220

Pro Ser Ile Ser Lys Thr Pro Glu Asp Ser Lys Ser Ser Ser Gly Cys
225                 230                 235                 240

Asp Thr Ala Asp Asp Pro Asn Ser Glu Leu Glu Asn Gly Ala Asp Pro
              245                 250                 255

Glu Leu Gly Asn Gly His Ala Phe Glu Leu Glu Asn Gly Pro His Ser
              260                 265                 270

Leu Lys Asp Val Ala Gly Pro His Leu Glu Arg Ser Glu Ala Asp Ser
       275                 280                 285

Glu Val Glu Leu Arg Val Pro Lys Thr Glu Ala Pro Leu Ser Asp Ser
```

```
Asn Asp Lys Arg Arg Phe Ser Lys Thr Gly Lys Thr Asp Phe Gln Ser
305                 310             315             320

Ser Asp Cys Leu Ala Arg Glu Glu Val Gly Arg Ile Trp Lys Met Glu
                325             330             335

Leu Leu Lys Glu Ser Asp Gly Leu Gly Ile Gln Val Ser Gly Gly Arg
            340             345             350

Gly Ser Lys Arg Ser Pro His Ala Ile Val Val Thr Gln Val Lys Glu
        355             360             365

Gly Gly Ala Ala His Arg Asp Gly Arg Leu Ser Leu Gly Asp Glu Leu
    370             375             380

Leu Val Ile Asn Gly His Leu Leu Val Gly Leu Ser His Glu Glu Ala
385             390             395             400

Val Ala Ile Leu Arg Ser Ala Thr Gly Met Val Gln Leu Val Val Ala
            405             410             415

Ser Lys Met Pro Gly Ser Glu Glu Ser Gln Asp Val Gly Ser Ser Glu
        420             425             430

Glu Ser Lys Gly Asn Leu Glu Ser Pro Lys Gln Gly Asn Cys Lys Thr
        435             440             445

Lys Leu Lys Ser Arg Leu Ser Gly Gly Val His Arg Leu Glu Ser Val
    450             455             460

Glu Glu Tyr Asn Glu Leu Met Val Arg Asn Gly Asp Pro Arg Ile Arg
465             470             475             480

Met Leu Glu Val Ser Arg Asp Gly Arg Lys His Ser Leu Pro Gln Leu
            485             490             495

Leu Asp Ser Thr Gly Thr Ser Gln Glu Tyr His Ile Val Lys Lys Ser
            500             505             510

Thr Arg Ser Leu Ser Thr Thr His Val Glu Ser Pro Trp Arg Leu Ile
        515             520             525

Arg Pro Ser Val Ile Ser Ile Ile Gly Leu Tyr Lys Glu Lys Gly Lys
    530             535             540

Gly Leu Gly Phe Ser Ile Ala Gly Gly Arg Asp Cys Ile Arg Gly Gln
545             550             555             560

Met Gly Ile Phe Val Lys Thr Ile Phe Pro Asn Gly Ser Ala Ala Glu
            565             570             575

Asp Gly Arg Leu Lys Glu Gly Asp Glu Ile Leu Asp Val Asn Gly Ile
        580             585             590

Pro Ile Lys Gly Leu Thr Phe Gln Glu Ala Ile His Thr Phe Lys Gln
```

193

Ile Arg Ser Gly Leu Phe Val Leu Thr Val Arg Thr Lys Leu Leu Ser
    610   615   620

Pro Ser Leu Thr Pro Cys Ser Thr Pro Thr His Met Ser Arg Ser Ser
625   630   635   640

Ser Pro Ser Phe Asn Thr Asn Ser Gly Gly Thr Pro Ala Gly Gly Gly
            645   650   655

Gln Glu Glu Gly Gly Ser Ser Ser Leu Gly Arg Lys Ala Pro Gly Pro
            660   665   670

Lys Asp Arg Ile Val Met Glu Val Thr Leu Asn Lys Glu Pro Arg Val
        675   680   685

Gly Leu Gly Ile Gly Ala Cys Cys Leu Ala Leu Glu Asn Ser Pro Pro
    690   695   700

Gly Ile Tyr Ile His Ser Leu Ala Pro Gly Ser Val Ala Lys Met Glu
705   710   715   720

Ser Asn Leu Ser Arg Gly Asp Gln Ile Leu Glu Val Asn Ser Val Asn
            725   730   735

Val Arg His Ala Ala Leu Ser Lys Val His Ala Ile Leu Ser Lys Cys
        740   745   750

Pro Pro Gly Pro Val Arg Leu Val Ile Gly Arg His Pro Asn Pro Lys
        755   760   765

Val Ser Glu Gln Glu Met Asp Glu Val Ile Ala Arg Ser Thr Tyr Gln
    770   775   780

Glu Ser Arg Glu Ala Asn Ser Ser Pro Gly Leu Gly Thr Pro Leu Lys
785   790   795   800

Ser Pro Ser Leu Ala Lys Lys Asp Ser Leu Leu Ser Glu Ser Glu Leu
            805   810   815

Ser Gln Tyr Phe Val His Asp Gly Gln Gly Ser Leu Ser Asp Phe Val
        820   825   830

Val Ala Gly Ser Glu Asp Glu Asp His Pro Gly Ser Gly Tyr Glu Thr
        835   840   845

Ser Glu Asp Gly Ser Leu Leu Pro Val Pro Ser Ala His Lys Ala Arg
    850   855   860

Ala Asn Ser Leu Val Thr Leu Gly Ser Gln Arg Thr Ser Gly Leu Leu
865   870   875   880

His Lys Gln Val Thr Val Ala Arg Gln Ala Ser Leu Pro Gly Ser Pro
            885   890   895

Gln Val Leu Arg Asn Pro Leu Leu Arg Gln Arg Arg Val Arg Cys Tyr

Asp Ser Asn Gly Gly Ser Asp Asp Glu Asp Phe Asp Gly Glu Gly Asp
  915   920   925

Cys Ile Ser Leu Pro Gly Val Leu Pro Gly Pro Gly Lys Pro Leu Val
  930   935   940

Glu Asp Asp Thr Arg Pro Ala Leu Thr Thr Ser Ser Lys Ser Ile Asp
945   950   955   960

Val Asn Lys Gln Glu Glu Arg Leu Gln Lys Pro Leu Val Ser Lys Ala
    965   970   975

Cys Ser Val Pro Leu Leu Gly Ser Ser Leu Asp Ser Glu His Ser Ile
    980   985   990

Leu Asn Gly Ala Gly Gly Thr Pro Pro Lys Val Ala Ser Leu Pro Gly
  995   1000   1005

Ser Gly Glu Thr Pro Lys Asn Gly Pro Arg Gly Ser Gly Arg Lys Glu
  1010   1015   1020

Met Ser Gly Ser Arg Ser Ser Pro Lys Leu Glu Tyr Arg Val Pro Thr
1025   1030   1035   1040

Asp Thr Gln Ser Pro Arg Ser Pro Glu Asn His Thr Ser Pro Pro Gln
    1045   1050   1055

Lys Ser Glu Asn Leu Val Ser Arg His Lys Pro Val Ala Arg Ile Ser
    1060   1065   1070

Pro His Tyr Lys Arg Ser Asp Ala Glu Glu Ala Pro Gly Gly Thr Ala
  1075   1080   1085

Asn Gly Pro Cys Ala Gln Asp Leu Lys Val Gln Ala Ser Pro Val Lys
  1090   1095   1100

Asp Pro Val Thr Ser Arg Gln Pro Gly Gly Thr Ala Glu Lys Glu Leu
1105   1110   1115   1120

Arg Gly Asn Pro Thr Pro Gly Asp Ser Ser Val Pro Thr Asn Cys Gly
    1125   1130   1135

Pro Ala Ser Thr Pro Cys His Pro Asn Ile Gly Leu Pro Thr Glu Asn
  1140   1145   1150

Pro Gln Gly Ala Ala Pro Glu Cys Gly Pro His Pro Gly Thr Gly Trp
  1155   1160   1165

Asp Gly Ser Ser Glu His Leu Cys Ser Pro Gly Lys Ser Arg Glu Val
  1170   1175   1180

His Pro Asp Ser Ser Glu Thr Pro Thr Val Ala Glu Gln Val His Gln
1185   1190   1195   1200

Pro Glu Ser Leu Ser Gln Pro Val Ser Pro Arg Thr Ser Glu Pro Glu

Ser Gln Gly Ile Ser Lys Met Lys Pro Pro Ser Gln Arg Cys Val Ser
            1220   1225   1230

Pro Arg Glu Lys Ala Ser Thr Pro Pro Asp Ser Ser Arg Ala Trp Ala
        1235   1240   1245

Ala Pro Gly Asp Ser Ser Pro Ser Thr Arg Arg Ile Ala Val Pro Met
    1250   1255   1260

Ser Thr Gly Ala Ala Pro Ala Thr Ala Ile Pro Gln Ala Ser Leu Val
1265   1270   1275   1280

Ser Gln Glu Arg Ser Arg Gly Leu Ser Gly Pro Ser Lys Gly Leu Gly
            1285   1290   1295

Thr Lys Glu Leu Cys Ile Pro Lys Ser Leu Lys Asp Gly Ala Leu Leu
        1300   1305   1310

Glu Asp Thr Ala Pro Ala Ser Gly Lys Met Ser His Ala Ser Ser Pro
        1315   1320   1325

Ser Gly Pro Val Ala Thr Glu Arg Thr Leu Ser Gly Ser Pro Glu Asn
    1330   1335   1340

Pro Val Thr Asp Ile Asp Asn Phe Ile Glu Glu Ala Ser Glu Ala Arg
1345   1350   1355   1360

Leu Ser Gln Ser Pro Gln Lys Ala Asp Cys Arg Ala His Gly Asp Thr
            1365   1370   1375

Phe Glu Ser Gln Pro Pro Gly Gly Ala Gly Ser Ser Ser Ser His His
            1380   1385   1390

Ala Gln Met Val Arg Ser Asp Gln Thr Ser Ser Pro Arg Lys Thr Gly
        1395   1400   1405

Gly Thr Gly Ser Pro Pro Pro Gln Gln Trp Ala Leu Gln Pro Ser Val
    1410   1415   1420

Leu Asp Ser Ile His Pro Asp Lys His Leu Ala Val Asn Lys Thr Phe
1425   1430   1435   1440

Leu Asn Asn Tyr Ser Arg Asn Phe Ser Asn Phe His Glu Asp Ser Ile
            1445   1450   1455

Ser Leu Ser Gly Pro Gly Gly Ser Ser Glu Pro Ser Pro Ser Ser Met
            1460   1465   1470

Tyr Gly Asn Ala Glu Asp Ser Ser Ser Asp Pro Glu Ser Leu Ala Glu
        1475   1480   1485

Asp Pro Gly Ala Ala Ala Arg Asn Asn Trp Ser Pro Pro Leu Ser Pro
    1490   1495   1500

Glu Ser Ser Pro Lys Glu Gly Ser Ser Glu Ser Glu Asp Glu Arg Ile

Glu Ile Cys Ser Thr Asp Gly Cys Pro Gly Thr Pro Val Thr Ala Pro
                1525   1530   1535

Pro Pro Thr Gln Val Ala Leu Cys Pro Val Leu Pro Val Gln Gln Arg
            1540   1545   1550

Ala Val Cys Lys Pro Val Gly Asp Ile Cys Glu Arg Ala Cys Phe Val
        1555   1560   1565

Pro Gly Ala Ser Arg Thr Ser Ile Pro Asp Ser Ser Gln Pro Phe Ser
    1570   1575   1580

Phe Leu Asp Val Ser Ser Glu Glu Pro Glu Thr Trp Ala Ser Ile Asn
1585   1590   1595   1600

Ala Ser Gln Asn His Met Pro Val Cys Thr Glu Gly Ile Met Asp Val
                1605   1610   1615

Thr Ser Thr Ser Ser Asn Met Gly Asp Ser Gln Ser Ser Gln Met Thr
            1620   1625   1630

Arg His Cys Arg Asn Ala Pro Phe Val Leu Gly Asn Pro Asp Met Val
        1635   1640   1645

Asn Asp Leu Gly Arg Asp Leu Leu Asp Glu Gly Ala Pro Lys Glu Gly
    1650   1655   1660

Ala Ala Ala Ala Ser Val Met Arg Ser Val Phe Ala Leu Gly Ala Glu
1665   1670   1675   1680

Gly Pro Lys Asn Gly Glu Ala Val Leu Ala Asp Leu His Ile Ala Glu
            1685   1690   1695

Arg Gly Asn Leu Glu Asp Leu Leu Gln Lys Pro Lys Thr Ile Ser Arg
            1700   1705   1710

Arg Pro Ile Leu Thr Trp Phe Lys Glu Ile Asn Lys Asp Ser Gln Gly
        1715   1720   1725

Ser His Leu Arg Ser Thr Ser Glu Lys Glu Gln Ser Ser Met Leu Ala
    1730   1735   1740

Leu Gly Pro Gly Ser Lys Ala Asn Met Val Asn Thr Gly His Arg Lys
1745   1750   1755   1760

Gly Val Thr Val Pro Lys Ser Pro Ser Arg Gln Lys Ser Gln Glu
            1765   1770   1775

Asn Lys Asp Leu Pro Pro Lys Ser Pro Val Glu Thr Leu Gly Asn Cys
            1780   1785   1790

Gln Lys Pro Lys Cys Ser Pro Lys Leu Lys Arg Leu Asn Ser Lys Gly
    1795   1800   1805

Lys Ala Ser Pro Glu Val Pro Val Ala Ile Ser Thr Lys Gly Ser Arg

Asn Asp His Arg Lys Thr Leu Pro Ser Pro Gln Ala Ser His Lys Met
1825   1830   1835   1840

Phe Ser Lys Ala Val Ser His Arg Leu His Ile Ala Asp Gln Glu Glu
          1845   1850   1855

Pro Lys Asn Thr Ala Gly Asp Thr Pro Lys Pro Pro Gln Cys Val Pro
     1860   1865   1870

Glu Ser Lys Pro Pro Gln Ala Ala Leu Gly Ser Leu Arg Thr Ser Ala
     1875   1880   1885

Ser Asp Thr Ser Ile Arg Thr Phe Thr Ser Pro Leu Thr Ser Pro Lys
     1890   1895   1900

Leu Leu Pro Glu Gln Gly Ala Asn Ser Arg Phe His Met Ala Val Tyr
1905   1910   1915   1920

Leu Glu Ser Asp Thr Ser Cys Pro Thr Thr Ser Arg Ser Pro Arg Ser
          1925   1930   1935

Gly Pro Glu Gly Lys Ala Pro His Ala Asn Ser Gly Ser Ala Ser Pro
          1940   1945   1950

Pro Ala Ser Arg Ala Ser Leu Ala Leu Ala Gly Ile Arg Gln Ser Lys
          1955   1960   1965

Gln Phe Thr Pro Gly Arg Ala Asp Leu Leu Val Ser Glu Ala Thr Gln
     1970   1975   1980

Pro Gln Gly Ile Cys Glu Lys Gly Ala Glu Lys Lys Val Ser Asp Pro
1985   1990   1995   2000

Pro Gln Arg Thr Asn Gln Leu Lys Ile Val Glu Ile Ser Ser Glu Arg
          2005   2010   2015

Val Pro Lys Asn Ala Cys Gly Asp Arg Pro Pro Glu Ser Asp Arg Lys
          2020   2025   2030

Gly Gly Phe Leu Thr Gln Asn Asn Cys Gln Glu Lys Ser Ala Ile Arg
          2035   2040   2045

Leu Arg Gln Ser Glu Glu Ser Ser Pro Glu His Thr Pro Phe Pro Pro
     2050   2055   2060

Ser Gln Ala Ser Gln Val Glu Arg Glu Ile Arg Trp Ser Phe Ser Met
2065   2070   2075   2080

Ala Lys Pro Ala Thr Ser Ser Ser Ser Ser Leu Gln Leu Pro Ala Lys
          2085   2090   2095

Leu Pro Glu Ser Phe Gln Gly Lys Ser Ser Gln Met Pro Ala Ser Val
          2100   2105   2110

Gly Val Pro Lys Asn Gly Val Pro Ile Gly Leu Ala Gly Glu Glu Ser

Pro Tyr Phe Thr Pro Arg Pro Ala Thr Arg Thr Tyr Ser Met Pro Ala
   2130   2135   2140

Gln Phe Ser Ser His Phe Gly Arg Glu Gly Pro Ser Pro His Ser Pro
2145   2150   2155   2160

Ser His Ser Pro Gln Asp Pro Gln Val Pro Ala Met Gly Gly Lys Leu
         2165   2170   2175

Ser Glu Lys Thr Ala Lys Gly Val Thr Asn Gly Gln Gly Val Tyr Ser
         2180   2185   2190

Val Lys Pro Leu Leu Glu Thr Ser Lys Asn Leu Ser Pro Val Asp Gly
         2195   2200   2205

Arg Asp Val Ser Ala Asp Pro Glu Thr Ser Cys Leu Ile Pro Asp Lys
   2210   2215   2220

Val Lys Val Thr Arg Arg Gln Tyr Cys Cys Glu Gln Ser Trp Pro His
2225   2230   2235   2240

Glu Ser Thr Ser Phe Phe Ser Val Lys Gln Arg Ile Lys Ser Phe Glu
         2245   2250   2255

Asn Leu Ala Asn Ser Asp Arg Pro Thr Ala Lys Cys Ala Thr Ser Pro
         2260   2265   2270

Phe Leu Ser Val Ser Ser Lys Pro Pro Ile Asn Arg Arg Ser Ser Gly
         2275   2280   2285

Ser Ile Pro Ser Gly Ser Pro Ser Asp Met Thr Ser Arg Ser Leu Arg
   2290   2295   2300

Arg Ser Leu Ser Ser Cys Ser Glu Ser Gln Ser Glu Ala Ser Ser Leu
2305   2310   2315   2320

Leu Pro Gln Met Thr Lys Ser Pro Ser Ser Met Thr Leu Thr Val Ser
         2325   2330   2335

Arg Gln Asn Pro Pro Asp Thr Ser Asn Lys Gly Pro Ser Pro Asp Pro
         2340   2345   2350

Lys Lys Ser Leu Val Pro Val Gly Ile Pro Thr Ser Thr Val Ser Pro
   2355   2360   2365

Ala Ser Pro Ser Lys Arg Asn Lys Ser Ser Val Arg His Ala Gln Pro
   2370   2375   2380

Ser Pro Val Ser Arg Ser Lys Leu Gln Glu Arg Arg Thr Leu Ser Met
2385   2390   2395   2400

Pro Asp Leu Asp Lys Leu Cys Asn Gly Glu Asp Asp Ser Ala Ser Pro
         2405   2410   2415

Gly Ala Val Leu Phe Lys Thr Gln Leu Glu Ile Thr Pro Arg Arg Ser

Lys Gly Ser Gln Ala Thr Ser Pro Ala Gly Ser Pro Ala Arg Gly His
        2435   2440   2445

Ala Asp Phe Asn Gly Ser Thr Phe Leu Ser Cys Pro Met Asn Gly Gly
    2450   2455   2460

Thr Arg Ala Tyr Thr Lys Gly Asn Ser Pro Pro Ala Ser Glu Pro Ala
2465   2470   2475   2480

Ile Ala Thr Gly Ser Arg Glu Glu Gly Glu Ser Val Trp Ala Thr Pro
            2485   2490   2495

Ser Gly Lys Ser Trp Ser Val Ser Leu Asp Arg Leu Leu Ala Ser Val
        2500   2505   2510

Gly Asn Gln Gln Arg Leu Gln Gly Ile Leu Ser Leu Val Gly Ser Lys
        2515   2520   2525

Ser Pro Ile Leu Thr Leu Ile Gln Glu Ala Lys Ala Gln Ser Glu Thr
    2530   2535   2540

Lys Glu Asp Ile Cys Phe Ile Val Leu Asn Lys Lys Glu Gly Ser Gly
2545   2550   2555   2560

Leu Gly Phe Ser Val Ala Gly Gly Ala Asp Val Glu Pro Lys Ser Val
            2565   2570   2575

Met Val His Arg Val Phe Ser Gln Gly Val Ala Ser Gln Glu Gly Thr
        2580   2585   2590

Val Ser Arg Gly Asp Phe Leu Leu Ser Val Asn Gly Thr Ser Leu Ala
        2595   2600   2605

Gly Leu Ala His Ser Glu Val Thr Lys Val Leu His Gln Ala Glu Leu
    2610   2615   2620

His Lys His Ala Leu Met Ile Ile Lys Lys Gly Asn Asp Gln Pro Gly
2625   2630   2635   2640

Pro Ser Phe Lys Gln Glu Pro Pro Ser Ala Asn Gly Lys Gly Pro Phe
            2645   2650   2655

Pro Arg Arg Thr Leu Pro Leu Glu Pro Gly Ala Gly Arg Asn Gly Ala
        2660   2665   2670

Ala His Asp Ala Leu Cys Val Glu Val Leu Lys Thr Ser Ala Gly Leu
    2675   2680   2685

Gly Leu Ser Leu Asp Gly Gly Lys Ser Ser Val Ser Gly Glu Gly Pro
    2690   2695   2700

Leu Val Ile Lys Arg Val Tyr Lys Gly Gly Ala Ala Glu Arg Ala Gly
2705   2710   2715   2720

Thr Ile Glu Ala Gly Asp Glu Ile Leu Ala Ile Asn Gly Lys Pro Leu

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                2725                    2730                    2735

Val Gly Leu Val His Phe Asp Ala Trp Asn Ile Met Lys Ser Val Pro
          2740                    2745                    2750

Glu Gly Pro Val Gln Leu Val Ile Arg Lys His Arg Asp Ser
        2755                    2760                    2765


<210> 63
<211> 2641
<212> PRT
<213> Homo sapiens

<400> 63
Met Pro Ile Thr Gln Asp Asn Ala Val Leu His Leu Pro Leu Leu Tyr
  1               5                   10                  15

Gln Trp Leu Gln Asn Ser Leu Gln Glu Gly Gly Asp Gly Pro Glu Gln
            20                  25                  30

Arg Leu Cys Gln Ala Ala Ile Gln Lys Leu Gln Glu Tyr Ile Gln Leu
          35                  40                  45

Asn Phe Ala Val Asp Glu Ser Thr Val Pro Pro Asp His Ser Pro Pro
    50                  55                  60

Glu Met Glu Ile Cys Thr Val Tyr Leu Thr Lys Glu Leu Gly Asp Thr
 65                  70                  75                  80

Glu Thr Val Gly Leu Ser Phe Gly Asn Ile Pro Val Phe Gly Asp Tyr
              85                  90                  95

Gly Glu Lys Arg Arg Gly Gly Lys Lys Arg Lys Thr His Gln Gly Pro
            100                 105                 110

Val Leu Asp Val Gly Cys Ile Trp Val Thr Glu Leu Arg Lys Asn Ser
          115                 120                 125

Pro Ala Gly Lys Ser Gly Lys Val Arg Leu Arg Asp Glu Ile Leu Ser
    130                 135                 140

Leu Asn Gly Gln Leu Met Val Gly Val Asp Val Ser Gly Ala Ser Tyr
145                 150                 155                 160

Leu Ala Glu Gln Cys Trp Asn Gly Gly Phe Ile Tyr Leu Ile Met Leu
              165                 170                 175

Arg Arg Phe Lys His Lys Ala His Ser Thr Tyr Asn Gly Asn Ser Ser
            180                 185                 190

Asn Ser Ser Glu Pro Gly Glu Thr Pro Thr Leu Glu Leu Gly Asp Arg
          195                 200                 205

Thr Ala Lys Lys Gly Lys Arg Thr Arg Lys Phe Gly Val Ile Ser Arg
    210                 215                 220


                              201
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Pro Pro Ala Asn Lys Ala Pro Glu Glu Ser Lys Gly Ser Ala Gly Cys
225   230   235   240

Glu Val Ser Ser Asp Pro Ser Thr Glu Leu Glu Asn Gly Ala Asp Pro
                245   250   255

Glu Leu Gly Asn Gly His Val Phe Gln Leu Glu Asn Gly Pro Asp Ser
            260   265   270

Leu Lys Glu Val Ala Gly Pro His Leu Glu Arg Ser Glu Val Asp Arg
        275   280   285

Gly Thr Glu His Arg Ile Pro Lys Thr Asp Ala Pro Leu Thr Thr Ser
    290   295   300

Asn Asp Lys Arg Arg Phe Ser Lys Gly Gly Lys Thr Asp Phe Gln Ser
305   310   315   320

Ser Asp Cys Leu Ala Arg Gln Glu Glu Val Gly Arg Ile Trp Lys Met
            325   330   335

Glu Leu Leu Lys Glu Ser Asp Gly Leu Gly Ile Gln Val Ser Gly Gly
        340   345   350

Arg Gly Ser Lys Arg Ser Pro His Ala Ile Val Val Thr Gln Val Lys
        355   360   365

Glu Gly Gly Ala Ala His Arg Glu Tyr His Ile Val Lys Lys Ser Thr
    370   375   380

Arg Ser Leu Ser Thr Thr Gln Val Glu Ser Pro Trp Arg Leu Ile Arg
385   390   395   400

Pro Ser Val Ile Ser Ile Ile Gly Leu Tyr Lys Glu Lys Gly Lys Gly
            405   410   415

Leu Gly Phe Ser Ile Ala Gly Gly Arg Asp Cys Ile Arg Gly Gln Met
            420   425   430

Gly Ile Phe Val Lys Thr Ile Phe Pro Asn Gly Ser Ala Ala Glu Asp
        435   440   445

Gly Arg Leu Lys Glu Gly Asp Glu Ile Leu Asp Val Asn Gly Ile Pro
    450   ·   455   460

Ile Lys Gly Leu Thr Phe Gln Glu Ala Ile His Thr Phe Lys Gln Ile
465   470   475   480

Arg Ser Gly Leu Phe Val Leu Thr Val Arg Thr Lys Leu Val Ser Pro
            485   490   495

Ser Leu Thr Pro Cys Ser Thr Pro Thr His Met Ser Arg Ser Ala Ser
            500   505   510

Pro Asn Phe Asn Thr Ser Gly Gly Ala Ser Ala Gly Gly Ser Asp Glu
            515   520   525

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Gly Ser Ser Ser Ser Leu Gly Arg Lys Thr Pro Gly Pro Lys Asp Arg
    530                 535             540

Ile Val Met Glu Val Thr Leu Asn Lys Glu Pro Arg Val Gly Leu Gly
545                 550             555                 560

Ile Gly Ala Cys Cys Leu Ala Leu Glu Asn Ser Pro Pro Gly Ile Tyr
                565             570                 575

Ile His Ser Leu Ala Pro Gly Ser Val Ala Lys Met Glu Ser Asn Leu
            580             585             590

Ser Arg Gly Asp Gln Ile Leu Glu Val Asn Ser Val Asn Val Arg His
        595             600             605

Ala Ala Leu Ser Lys Val His Ala Ile Leu Ser Lys Cys Pro Val Ser
    610             615             620

Glu Gln Glu Met Asp Glu Val Ile Ala Arg Ser Thr Tyr Gln Glu Ser
625             630             635             640

Lys Glu Ala Asn Ser Ser Pro Gly Leu Gly Thr Pro Leu Lys Ser Pro
            645             650             655

Ser Leu Ala Lys Lys Asp Ser Leu Ile Ser Glu Ser Glu Leu Ser Gln
        660             665             670

Tyr Phe Ala His Asp Val Pro Gly Pro Leu Ser Asp Phe Met Val Ala
        675             680             685

Gly Ser Glu Asp Glu Asp His Pro Gly Ser Gly Cys Ser Thr Ser Glu
    690             695             700

Glu Gly Ser Leu Pro Pro Ser Thr Ser Ser Glu Pro Gly Lys Pro Arg
705             710             715             720

Ala Asn Ser Leu Val Thr Leu Gly Ser His Arg Ala Ser Gly Leu Phe
            725             730             735

His Lys Gln Val Thr Val Ala Arg Gln Ala Ser Leu Pro Gly Ser Pro
        740             745             750

Gln Ala Leu Arg Asn Pro Leu Leu Arg Gln Arg Lys Val Gly Cys Tyr
    755             760             765

Asp Ala Asn Asp Ala Ser Asp Glu Glu Glu Phe Asp Arg Glu Gly Asp
    770             775             780

Cys Ile Ser Leu Pro Gly Ala Leu Pro Gly Pro Ile Arg Pro Leu Ser
785             790             795             800

Glu Asp Asp Pro Arg Arg Val Ser Ile Ser Ser Ser Lys Gly Met Asp
            805             810             815

Val His Asn Gln Glu Glu Arg Pro Arg Lys Thr Leu Val Ser Lys Ala
            820             825             830
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Ile Ser Ala Pro Leu Leu Gly Ser Ser Val Asp Leu Glu Glu Ser Ile
        835   840   845

Pro Glu Gly Met Val Asp Ala Ala Ser Tyr Ala Ala Asn Leu Thr Asp
    850   855   860

Ser Ala Glu Ala Pro Lys Gly Ser Pro Gly Ser Trp Trp Lys Lys Glu
865   870   875   880

Leu Ser Gly Ser Ser Ser Ala Pro Lys Leu Glu Tyr Thr Val Arg Thr
                885   890   895

Asp Thr Gln Ser Pro Thr Asn Thr Gly Ser Pro Ser Ser Pro Gln Gln
            900   905   910

Lys Ser Glu Gly Leu Gly Ser Arg His Arg Pro Val Ala Arg Val Ser
        915   920   925

Pro His Cys Lys Arg Ser Glu Ala Glu Ala Lys Pro Ser Gly Ser Gln
    930   935   940

Thr Val Asn Leu Thr Gly Arg Ala Asn Asp Pro Cys Asp Leu Asp Ser
945   950   955   960

Arg Val Gln Ala Thr Ser Val Lys Val Thr Val Ala Gly Phe Gln Pro
            965   970   975

Gly Gly Ala Val Glu Lys Leu Cys Gln Glu Ser Leu Gly Lys Leu Thr
            980   985   990

Thr Gly Asp Ala Cys Val Ser Thr Ser Cys Glu Leu Ala Ser Ala Leu
        995   1000   1005

Ser His Leu Asp Ala Ser His Leu Thr Glu Asn Leu Pro Lys Ala Ala
    1010   1015   1020

Ser Glu Leu Gly Gln Gln Pro Met Thr Ser Ser Asp Leu Ile Ser Ser
1025   1030   1035   1040

Pro Gly Lys Lys Gly Ala Ala His Pro Asp Pro Ser Lys Thr Ser Val
            1045   1050   1055

Asp Thr Gly Gln Val Ser Arg Pro Glu Asn Pro Ser Gln Pro Ala Ser
        1060   1065   1070

Pro Arg Val Thr Lys Cys Lys Ala Arg Ser Pro Val Arg Leu Pro His
        1075   1080   1085

Glu Gly Ser Pro Ser Pro Gly Glu Lys Ala Ala Ala Pro Pro Asp Tyr
    1090   1095   1100

Ser Lys Thr Arg Ser Ala Ser Glu Thr Ser Thr Pro His Asn Thr Arg
1105   1110   1115   1120

Arg Val Ala Ala Leu Arg Gly Ala Gly Pro Gly Ala Glu Gly Met Thr
            1125   1130   1135

Pro Ala Gly Ala Val Leu Pro Gly Asp Pro Leu Thr Ser Gln Glu Gln
        1140   1145   1150

Arg Gln Gly Ala Pro Gly Asn His Ser Lys Ala Leu Glu Met Thr Gly
        1155   1160   1165

Ile His Ala Pro Glu Ser Ser Gln Glu Pro Ser Leu Leu Glu Gly Ala
     1170   1175   1180

Asp Ser Val Ser Ser Arg Ala Pro Gln Ala Ser Leu Ser Met Leu Pro
1185   1190   1195   1200

Ser Thr Asp Asn Thr Lys Glu Ala Cys Gly His Val Ser Gly His Cys
        1205   1210   1215

Cys Pro Gly Gly Ser Arg Glu Ser Pro Val Thr Asp Ile Asp Ser Phe
        1220   1225   1230

Ile Lys Glu Leu Asp Ala Ser Ala Ala Arg Ser Pro Ser Ser Gln Thr
        1235   1240   1245

Gly Asp Ser Gly Ser Gln Glu Gly Ser Ala Gln Gly His Pro Pro Ala
     1250   1255   1260

Gly Ala Gly Gly Gly Ser Ser Cys Arg Ala Glu Pro Val Pro Gly Gly
1265   1270   1275   1280

Gln Thr Ser Ser Pro Arg Arg Ala Trp Ala Ala Gly Ala Pro Ala Tyr
        1285   1290   1295

Pro Gln Trp Ala Ser Gln Pro Ser Val Leu Asp Ser Ile Asn Pro Asp
        1300   1305   1310

Lys His Phe Thr Val Asn Lys Asn Phe Leu Ser Asn Tyr Ser Arg Asn
        1315   1320   1325

Phe Ser Ser Phe His Glu Asp Ser Thr Ser Leu Ser Gly Leu Gly Asp
     1330   1335   1340

Ser Thr Glu Pro Ser Leu Ser Ser Met Tyr Gly Asp Ala Glu Asp Ser
1345   1350   1355   1360

Ser Ser Asp Pro Glu Ser Leu Thr Glu Ala Pro Arg Ala Ser Ala Arg
        1365   1370   1375

Asp Gly Trp Ser Pro Pro Arg Ser Arg Val Ser Leu His Lys Glu Asp
        1380   1385   1390

Pro Ser Glu Ser Glu Glu Glu Gln Ile Glu Ile Cys Ser Thr Arg Gly
        1395   1400   1405

Cys Pro Asn Pro Pro Ser Ser Pro Ala His Leu Pro Thr Gln Ala Ala
     1410   1415   1420

Ile Cys Pro Ala Ser Ala Lys Val Leu Ser Leu Lys Tyr Ser Thr Pro
1425   1430   1435   1440

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Arg Glu Ser Val Ala Ser Pro Arg Glu Lys Ala Ala Cys Leu Pro Gly
          1445   1450   1455

Ser Tyr Thr Ser Gly Pro Asp Ser Ser Gln Pro Ser Ser Leu Leu Glu
          1460   1465   1470

Met Ser Ser Gln Glu His Glu Thr His Ala Asp Ile Ser Thr Ser Gln
          1475   1480   1485

Asn His Arg Pro Ser Cys Ala Glu Glu Thr Thr Glu Val Thr Ser Ala
     1490   1495   1500

Ser Ser Ala Met Glu Asn Ser Pro Leu Ser Lys Val Ala Arg His Phe
1505   1510   1515   1520

His Ser Pro Pro Ile Ile Leu Ser Ser Pro Asn Met Val Asn Gly Leu
          1525   1530   1535

Glu His Asp Leu Leu Asp Asp Glu Thr Leu Asn Gln Tyr Glu Thr Ser
          1540   1545   1550

Ile Asn Ala Ala Ala Ser Leu Ser Ser Phe Ser Val Asp Val Pro Lys
          1555   1560   1565

Asn Gly Glu Ser Val Leu Glu Asn Leu His Ile Ser Glu Ser Gln Asp
     1570   1575   1580

Leu Asp Asp Leu Leu Gln Lys Pro Lys Met Ile Ala Arg Arg Pro Ile
1585   1590   1595   1600

Met Ala Trp Phe Lys Glu Ile Asn Lys His Asn Gln Gly Thr His Leu
          1605   1610   1615

Arg Ser Lys Thr Glu Lys Glu Gln Pro Leu Met Pro Ala Arg Ser Pro
          1620   1625   1630

Asp Ser Lys Ile Gln Met Val Ser Ser Ser Gln Lys Lys Gly Val Thr
          1635   1640   1645

Val Pro His Ser Pro Pro Gln Pro Lys Thr Asn Leu Glu Asn Lys Asp
     1650   1655   1660

Leu Ser Lys Lys Ser Pro Ala Glu Met Leu Leu Thr Asn Gly Gln Lys
1665   1670   1675   1680

Ala Lys Cys Gly Pro Lys Leu Lys Arg Leu Ser Leu Lys Gly Lys Ala
          1685   1690   1695

Lys Val Asn Ser Glu Ala Pro Ala Ala Asn Ala Val Lys Ala Gly Gly
          1700   1705   1710

Thr Asp His Arg Lys Pro Leu Ile Ser Pro Gln Thr Ser His Lys Thr
          1715   1720   1725

Leu Ser Lys Ala Val Ser Gln Arg Leu His Val Ala Asp His Glu Asp
     1730   1735   1740

Pro Asp Arg Asn Thr Thr Ala Ala Pro Arg Ser Pro Gln Cys Val Leu
1745   1750   1755   1760

Glu Ser Lys Pro Pro Leu Ala Thr Ser Gly Pro Leu Lys Pro Ser Val
            1765   1770   1775

Ser Asp Thr Ser Ile Arg Thr Phe Val Ser Pro Leu Thr Ser Pro Lys
        1780   1785   1790

Pro Val Pro Glu Gln Gly Met Trp Ser Arg Phe His Met Ala Val Leu
        1795   1800   1805

Ser Glu Pro Asp Arg Gly Cys Pro Thr Thr Pro Lys Ser Pro Lys Cys
    1810   1815   1820

Arg Ala Glu Gly Arg Ala Pro Arg Ala Asp Ser Gly Pro Val Ser Pro
1825   1830   1835   1840

Ala Ala Ser Arg Asn Gly Met Ser Val Ala Gly Asn Arg Gln Ser Glu
            1845   1850   1855

Pro Arg Leu Ala Ser His Val Ala Ala Asp Thr Ala Gln Pro Arg Pro
            1860   1865   1870

Thr Gly Glu Lys Gly Gly Asn Ile Met Ala Ser Asp Arg Leu Glu Arg
        1875   1880   1885

Thr Asn Gln Leu Lys Ile Val Glu Ile Ser Ala Glu Ala Val Ser Glu
    1890   1895   1900

Thr Val Cys Gly Asn Lys Pro Ala Glu Ser Asp Arg Arg Gly Gly Cys
1905   1910   1915   1920

Leu Ala Gln Gly Asn Cys Gln Glu Lys Ser Glu Ile Arg Leu Tyr Arg
            1925   1930   1935

Gln Val Ala Glu Ser Ser Thr Ser His Pro Ser Ser Leu Pro Ser His
        1940   1945   1950

Ala Ser Gln Ala Glu Gln Glu Met Ser Arg Ser Phe Ser Met Ala Lys
        1955   1960   1965

Leu Ala Ser Ser Ser Ser Ser Leu Gln Thr Ala Ile Arg Lys Ala Glu
    1970   1975   1980

Tyr Ser Gln Gly Lys Ser Ser Leu Met Ser Asp Ser Arg Gly Val Pro
1985   1990   1995   2000

Arg Asn Ser Ile Pro Gly Gly Pro Ser Gly Glu Asp His Leu Tyr Phe
            2005   2010   2015

Thr Pro Arg Pro Ala Thr Arg Thr Tyr Ser Met Pro Ala Gln Phe Ser
        2020   2025   2030

Ser His Phe Gly Arg Glu Gly His Pro Pro His Ser Leu Gly Arg Ser
    2035   2040   2045

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Arg Asp Ser Gln Val Pro Val Thr Ser Ser Val Val Pro Glu Ala Lys
   2050            2055            2060

Ala Ser Arg Gly Gly Leu Pro Ser Leu Ala Asn Gly Gln Gly Ile Tyr
2065            2070            2075            2080

Ser Val Lys Pro Leu Leu Asp Thr Ser Arg Asn Leu Pro Ala Thr Asp
         2085            2090            2095

Glu Gly Asp Ile Ile Ser Val Gln Glu Thr Ser Cys Leu Val Thr Asp
         2100            2105            2110

Lys Ile Lys Val Thr Arg Arg His Tyr Cys Tyr Glu Gln Asn Trp Pro
         2115            2120            2125

His Glu Ser Thr Ser Phe Phe Ser Val Lys Gln Arg Ile Lys Ser Phe
   2130            2135            2140

Glu Asn Leu Ala Asn Ala Asp Arg Pro Val Ala Lys Ser Gly Ala Ser
2145            2150            2155            2160

Pro Phe Leu Ser Val Ser Ser Lys Pro Pro Ile Gly Arg Arg Ser Ser
         2165            2170            2175

Gly Ser Ile Val Ser Gly Ser Leu Gly His Pro Gly Asp Ala Ala Ala
         2180            2185            2190

Arg Leu Leu Arg Arg Ser Leu Ser Ser Cys Ser Glu Asn Gln Ser Glu
         2195            2200            2205

Ala Gly Thr Leu Leu Pro Gln Met Ala Lys Ser Pro Ser Ile Met Thr
   2210            2215            2220

Leu Thr Ile Ser Arg Gln Asn Pro Pro Glu Thr Ser Ser Lys Gly Ser
2225            2230            2235            2240

Asp Ser Glu Leu Lys Lys Ser Leu Gly Pro Leu Gly Ile Pro Thr Pro
         2245            2250            2255

Thr Met Thr Leu Ala Ser Pro Val Lys Arg Asn Lys Ser Ser Val Arg
         2260            2265            2270

His Thr Gln Pro Ser Pro Val Ser Arg Ser Lys Leu Gln Glu Leu Arg
         2275            2280            2285

Ala Leu Ser Met Pro Asp Leu Asp Lys Leu Cys Ser Glu Asp Tyr Ser
   2290            2295            2300

Ala Gly Pro Ser Ala Val Leu Phe Lys Thr Glu Leu Glu Ile Thr Pro
2305            2310            2315            2320

Arg Arg Ser Pro Gly Pro Pro Ala Gly Gly Val Ser Cys Pro Glu Lys
         2325            2330            2335

Gly Gly Asn Arg Ala Cys Pro Gly Gly Ser Gly Pro Lys Thr Ser Ala
         2340            2345            2350
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Ala Glu Thr Pro Ser Ser Ala Ser Asp Thr Gly Glu Ala Ala Gln Asp
    2355            2360            2365

Leu Pro Phe Arg Arg Ser Trp Ser Val Lys Leu Asp Gln Leu Leu Val
    2370            2375            2380

Ser Ala Gly Asp Gln Gln Arg Leu Gln Ser Val Leu Ser Ser Val Gly
2385            2390            2395            2400

Ser Lys Ser Thr Ile Leu Thr Leu Ile Gln Glu Ala Lys Ala Gln Ser
            2405            2410            2415

Glu Asn Glu Glu Asp Val Cys Phe Ile Val Leu Asn Arg Lys Glu Gly
            2420            2425            2430

Ser Gly Leu Gly Phe Ser Val Ala Gly Gly Thr Asp Val Glu Pro Lys
        2435            2440            2445

Ser Ile Thr Val His Arg Val Phe Ser Gln Gly Ala Ala Ser Gln Glu
    2450            2455            2460

Gly Thr Met Asn Arg Gly Asp Phe Leu Leu Ser Val Asn Gly Ala Ser
2465            2470            2475            2480

Leu Ala Gly Leu Ala His Gly Asn Val Leu Lys Val Leu His Gln Ala
            2485            2490            2495

Gln Leu His Lys Asp Ala Leu Val Val Ile Lys Lys Gly Met Asp Gln
        2500            2505            2510

Pro Arg Pro Ser Ala Arg Gln Glu Pro Pro Thr Ala Asn Gly Lys Gly
        2515            2520            2525

Leu Leu Ser Arg Lys Thr Ile Pro Leu Glu Pro Gly Ile Gly Arg Ser
    2530            2535            2540

Val Ala Val His Asp Ala Leu Cys Val Glu Val Leu Lys Thr Ser Ala
2545            2550            2555            2560

Gly Leu Gly Leu Ser Leu Asp Gly Gly Lys Ser Ser Val Thr Gly Asp
            2565            2570            2575

Gly Pro Leu Val Ile Lys Arg Val Tyr Lys Gly Gly Ala Ala Glu Gln
        2580            2585            2590

Ala Gly Ile Ile Glu Ala Gly Asp Glu Ile Leu Ala Ile Asn Gly Lys
        2595            2600            2605

Pro Leu Val Gly Leu Met His Phe Asp Ala Trp Asn Ile Met Lys Ser
    2610            2615            2620

Val Pro Glu Gly Pro Val Gln Leu Leu Ile Arg Lys His Arg Asn Ser
2625            2630            2635            2640

Ser
```

<210> 64
<211> 364
<212> PRT
<213> Mus musculus

<400> 64
Met Leu Arg Arg Phe Lys Gln Lys Ala His Leu Thr Tyr Asn Gly Asn
1   5   10   15

Ser Gly Asn Ser Ser Glu Pro Gly Glu Thr Pro Thr Leu Glu Leu Gly
            20   25   30

Asp Gln Thr Ser Lys Lys Gly Lys Arg Thr Arg Lys Phe Gly Val Ile
        35   40   45

Ser Arg Pro Ala Ile Ile Lys Ala Pro Glu Asp Ser Lys Ser Asn Ser
    50   55   60

Gly Cys Asp Thr Ala Asp Asp Pro Ser Ser Glu Leu Glu Asn Gly Thr
65   70   75   80

Asp Ser Glu Leu Gly Asn Gly His Ala Phe Glu Leu Glu Asn Gly Pro
                · 85   90   95

Asn Ser Leu Lys Asp Val Ala Gly Pro His Leu Glu Arg Ser Glu Ala
            100   105   110

Asp Arg Glu Ala Glu Leu Arg Val Pro Lys Thr Glu Ala Pro Leu Ser
        115   120   125

Asp Ser Asn Asp Lys Arg Arg Phe Ser Lys Thr Gly Lys Thr Asn Phe
    130   135   140

Gln Ser Ser Asp Ser Leu Ala Arg Glu Glu Val Gly Arg Ile Trp Glu
145   150   155   160

Met Glu Leu Leu Lys Glu Ser Asp Gly Leu Gly Ile Gln Val Ser Gly
                165   170   175

Gly Arg Gly Ser Lys Arg Ser Pro His Ala Ile Val Val Thr Gln Val
            180   185   190

Lys Glu Gly Gly Ala Ala His Arg Asp Gly Arg Leu Ser Leu Gly Asp
        195   200   205

Glu Leu Leu Val Ile Asn Gly His Leu Leu Val Gly Leu Ser His Glu
    210   215   220

Glu Ala Val Ala Ile Leu Arg Ser Ala Thr Gly Met Val Gln Leu Val
225   230   235   240

Val Ala Ser Lys Met Leu Gly Ser Glu Glu Ser Gln Asp Val Gly Ser
            245   250   255

Ser Glu Glu Ser Lys Gly Asn Asn Leu Glu Ser Pro Lys Gln Gly Asn
            260   265   270

Ser Lys Met Lys Leu Lys Ser Arg Leu Ser Gly Gly Val His Arg Leu
        275   280   285

Glu Ser Val Glu Glu Tyr Asn Glu Leu Met Val Arg Asn Gly Asp Pro
    290   295   300

Arg Ile Arg Met Leu Glu Val Ser Arg Asp Gly Arg Lys His Ser Leu
305   310   315   320

Pro Gln Leu Leu Asp Ser Thr Gly Thr Ser Gln Glu Tyr His Ile Val
                325   330   335

Lys Lys Ser Thr Arg Ser Leu Ser Thr Thr His Val Glu Ser Pro Trp
            340   345   350

Arg Leu Ile Arg Pro Ser Val Ile Ser Ile Ile Gly
        355   360

<210> 65
<211> 51
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRRCT
      Consensus Sequence

<400> 65
Asn Pro Phe Ile Cys Asp Cys Glu Leu Arg Trp Leu Leu Arg Trp Leu
  1   5   10   15

Gln Ala Asn Arg His Leu Gln Asp Pro Val Asp Leu Arg Cys Ala Ser
            20   25   30

Pro Glu Ser Leu Arg Gly Pro Leu Leu Leu Leu Pro Ser Ser Phe
        35   40   45

Lys Cys Pro
    50

<210> 66
<211> 51
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRRCT
      Consensus Sequence

<400> 66
Asn Pro Phe Ile Cys Asp Cys Glu Leu Arg Trp Leu Leu Arg Trp Leu
  1   5   10   15

Arg Glu Pro Arg Arg Leu Glu Asp Pro Glu Asp Leu Arg Cys Ala Ser

211

Pro Glu Ser Leu Arg Gly Pro Leu Leu Glu Leu Leu Pro Ser Asp Phe
        35   40   45

Ser Cys Pro
        50

<210> 67
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: CLECT
      Consensus Sequence

<400> 67
Cys Pro Ser Gly Trp Val Ser Tyr Pro Gly Gly Lys Cys Tyr Lys Phe
  1   5   10   15

Ser Thr Glu Lys Lys Thr Trp Ala Asp Ala Gln Ala Phe Cys Gln Ser
                20   25   30

Leu Gly Ala His Leu Ala Ser Ile His Ser Glu Glu Glu Asn Asp Phe
            35   40   45

Leu Leu Ser Leu Leu Lys Asn Ser Asn Ser Asp Tyr Tyr Trp Ile Gly
     50   .   55   60

Leu Ser Arg Pro Asp Ser Asn Gly Ser Trp Gln Trp Ser Asp Gly Ser
 65   .   70   75   80

Gly Pro Val Asp Tyr Ser Asn Trp Ala Pro Gly Glu Pro Gly Gly Ser
                85   90   95

Gly Asn Cys Val Val Leu Ser Thr Ser Gly Gly Gly Lys Trp Asn Asp
            100   105   110

Val Ser Cys Thr Ser Lys Leu Pro Phe Ile Cys Glu
        115   120

<210> 68
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: CUB Consensus
      Sequence

<400> 68
Cys Gly Gly Thr Leu Thr Ala Ser Ser Gly Thr Ile Thr Ser Pro Asn
  1   5   10   15

```
Tyr Pro Asn Ser Tyr Pro Asn Asn Leu Asn Cys Val Trp Thr Ile Ser
            20              25              30

Ala Pro Pro Gly Tyr Arg Ile Glu Leu Lys Phe Thr Asp Phe Asp Leu
            35              40              45

Glu Ser Ser Asp Asn Cys Thr Tyr Asp Tyr Val Glu Ile Tyr Asp Gly
        50              55              60

Pro Ser Thr Ser Ser Pro Leu Leu Gly Arg Phe Cys Gly Ser Glu Leu
65              70              75              80

Pro Pro Pro Ile Ile Ser Ser Ser Ser Asn Ser Met Thr Val Thr Phe
                85              90              95

Val Ser Asp Ser Ser Val Gln Lys Arg Gly Phe Ser Ala Arg Tyr Ser
            100             105             110

Ala Val


<210> 69
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: CUB Consensus
      Sequence

<400> 69
Cys Gly Gly Val Leu Thr Glu Ser Ser Gly Ser Ile Ser Ser Pro Asn
  1           5               10              15

Tyr Pro Asn Asp Tyr Pro Pro Asn Lys Glu Cys Val Trp Thr Ile Arg
            20              25              30

Ala Pro Pro Gly Tyr Arg Val Glu Leu Thr Phe Gln Asp Phe Asp Leu
            35              40              45

Glu Asp His Thr Gly Cys Arg Tyr Asp Tyr Val Glu Ile Arg Asp Gly
        50              55              60

Asp Gly Ser Ser Ser Pro Leu Leu Gly Lys Phe Cys Gly Ser Gly Pro
65              70              75              80

Pro Glu Asp Ile Val Ser Ser Ser Asn Arg Met Thr Ile Lys Phe Val
                85              90              95

Ser Asp Ala Ser Val Ser Lys Arg Gly Phe Lys Ala Thr Tyr
            100             105             110


<210> 70
<211> 107
<212> PRT
```

213

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Lectin C-type
     domain Consensus Sequence

<400> 70
Glu Ser Lys Thr Trp Ala Glu Ala Gln Ala Ala Cys Gln Lys Leu Gly
 1   5   10   15

Gly Gly Leu Val Ser Ile Gln Ser Ala Glu Glu Gln Asp Phe Leu Thr
            20   25   30

Ser Leu Thr Lys Ala Ser Asn Ser Tyr Ala Trp Ile Gly Leu Thr Asp
        35   40   45

Ile Asn Thr Glu Gly Thr Trp Val Trp Thr Asp Gly Ser Pro Val Asn
    50   55   60

Tyr Thr Asn Trp Ala Pro Gly Glu Pro Asn Asn Arg Gly Asn Lys Glu
65   70   75   80

Asp Cys Val Glu Ile Tyr Thr Asp Gly Asn Lys Trp Asn Asp Glu Pro
            85   90   95

Cys Gly Ser Lys Leu Pro Tyr Val Cys Glu Phe
            100   105

<210> 71
<211> 304
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: CNH domain
     Consensus Sequence

<400> 71
Tyr Thr Ala Lys Cys Asn His Pro Ile Thr Cys Asp Ala Lys Asn Leu
 1   5   10   15

Leu Val Gly Thr Glu Glu Gly Leu Tyr Val Leu Asn Arg Ser Asp Gln
            20   25   30

Gly Gly Thr Leu Glu Lys Ile Ile Ser Arg Arg Ser Val Thr Gln Ile
            35   40   45

Trp Val Leu Glu Glu Asn Asn Val Leu Leu Met Ile Ser Gly Lys Lys
    50   55   60

Pro Tyr Leu Tyr Ala His Pro Leu Ser Gly Leu Arg Glu Lys Asp Ala
65   70   75   80

Leu Gly Ser Ala Arg Leu Val Ile Arg Lys Asn Val Trp Val Lys Ile
            85   90   95

```
Glu Asp Val Lys Gly Cys His Leu Phe Ala Val Val Asn Gly Lys Arg
            100             105             110

Ile Leu Phe Leu Cys Ala Ala Leu Pro Ser Ser Val Gln Leu Leu Gln
            115             120             125

Trp Tyr Asn Pro Leu Lys Lys Phe Lys Leu Phe Lys Ser Lys Phe Leu
    130             135             140

Lys Lys Leu Ile Val Pro Val Pro Leu Phe Val Leu Leu Thr Ser Ser
145             150             155             160

Ser Phe Glu Leu Pro Lys Ile Cys Ile Gly Val Asp Lys Asn Gly Phe
            165             170             175

Asp Val Val Gln Phe His Gln Thr Ser Leu Val Ser Lys Glu Asp Leu
            180             185             190

Ser Leu Pro Asn Leu Asn Glu Glu Thr Ser Lys Lys Pro Ile Pro Val
            195             200             205

Ile Gln Val Pro Gln Ser Asp Asp Glu Leu Leu Leu Cys Phe Asp Glu
    210             215             220

Phe Gly Val Phe Val Asn Leu Gln Gly Met Arg Arg Ser Arg Lys Pro
225             230             235             240

Ile Leu Thr Trp Glu Phe Met Pro Glu Tyr Phe Ala Tyr His Glu Pro
            245             250             255

Tyr Leu Leu Ala Phe His Ser Asn Gly Ile Glu Ile Arg Ser Ile Glu
            260             265             270

Thr Gly Glu Leu Leu Gln Glu Leu Ala Asp Arg Glu Ala Arg Lys Ile
    275             280             285

Arg Val Leu Gly Ser Ser Asp Arg Lys Ile Leu Val Ser Ser Ser Pro
    290             295             300
```

<210> 72
<211> 256
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
      Serine/Threoniune protein kinase Consensus
      Sequence

<400> 72
```
Tyr Glu Leu Leu Glu Val Leu Gly Lys Gly Ala Phe Gly Lys Val Tyr
  1             5             10             15
```

215

Leu Ala Arg Asp Lys Lys Thr Gly Lys Leu Val Ala Ile Lys Val Ile
            20   25   30

Lys Lys Glu Lys Leu Lys Lys Lys Lys Arg Glu Arg Ile Leu Arg Glu
            35   40   45

Ile Lys Ile Leu Lys Lys Leu Asp His Pro Asn Ile Val Lys Leu Tyr
        50   55   60

Asp Val Phe Glu Asp Asp Asp Lys Leu Tyr Leu Val Met Glu Tyr Cys
65   70   75   80

Glu Gly Gly Asp Leu Phe Asp Leu Leu Lys Lys Arg Gly Arg Leu Ser
                85   90   95

Glu Asp Glu Ala Arg Phe Tyr Ala Arg Gln Ile Leu Ser Ala Leu Glu
            100   105   110

Tyr Leu His Ser Gln Gly Ile Ile His Arg Asp Leu Lys Pro Glu Asn
        115   120   125

Ile Leu Leu Asp Ser Asp Gly His Val Lys Leu Ala Asp Phe Gly Leu
    130   135   140

Ala Lys Gln Leu Asp Ser Gly Gly Thr Leu Leu Thr Thr Phe Val Gly
145   150   155   160

Thr Pro Glu Tyr Met Ala Pro Glu Val Leu Leu Gly Lys Gly Tyr Gly
                165   170   175

Lys Ala Val Asp Ile Trp Ser Leu Gly Val Ile Leu Tyr Glu Leu Leu
            180   185   190

Thr Gly Lys Pro Pro Phe Pro Gly Asp Asp Gln Leu Leu Ala Leu Phe
        195   200   205

Lys Lys Ile Gly Lys Pro Pro Pro Pro Phe Pro Pro Pro Glu Trp Lys
    210   215   220

Ile Ser Pro Glu Ala Lys Asp Leu Ile Lys Lys Leu Leu Val Lys Asp
225   230   235   240

Pro Glu Lys Arg Leu Thr Ala Glu Glu Ala Leu Glu His Pro Phe Phe
            245   250   255

<210> 73
<211> 301
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: CNH domain
      Consensus Sequence

216

<400> 73

```
Asn Thr Ala Lys Trp Asn His Pro Ile Thr Cys Asp Ala Lys Ile Leu
  1               5               10                  15

Leu Val Gly Thr Glu Glu Gly Leu Tyr Val Leu Asn Ile Ser Asp Gln
            20              25                  30

His Gly Thr Leu Glu Lys Leu Ile Gly Arg Arg Ser Val Thr Gln Ile
        35              40                  45

Trp Val Leu Glu Glu Asn Asn Val Leu Leu Met Ile Ser Gly Lys Lys
    50              55                  60

Pro Gln Leu Tyr Ser His Pro Leu Ser Ala Leu Thr Glu Lys Asp Ala
65              70              75                      80

Leu Gly Ser Ala Arg Leu Val Ile Arg Lys Asn Val Leu Thr Lys Ile
                85              90                  95

Pro Asp Val Lys Gly Cys His Leu Cys Ala Val Val Asn Gly Lys Arg
            100             105                 110

Ile Leu Phe Leu Cys His Ala Leu Gln Ser Ser Val Val Leu Leu Gln
        115             120                 125

Trp Tyr Asn Pro Leu Lys Lys Phe Lys Leu Phe Lys Ser Lys Phe Leu
    130             135                 140

Phe Pro Leu Ile Ser Pro Val Pro Val Phe Val Glu Leu Val Ser Ser
145             150                 155                 160

Ser Phe Glu Leu Pro Gly Ile Cys Ile Gly Ser Asp Lys Asn Gly Gly
            165                 170                 175

Asp Val Val Gln Phe His Gln Ser Leu Val Ser Lys Glu Asp Leu Ser
            180             185                 190

Leu Pro Phe Leu Ser Glu Glu Thr Ser Ser Lys Pro Ile Ser Val Val
        195             200                 205

Gln Val Pro Ala Asp Glu Leu Leu Leu Cys Tyr Asp Glu Phe Gly Val
    210             215                 220

Phe Val Asn Leu Tyr Gly Met Arg Arg Ser Arg Asn Pro Ile Leu His
225             230                 235                 240

Trp Glu Phe Met Pro Glu Ser Phe Ala Tyr His Ser Pro Tyr Leu Leu
            245             250                 255

Ala Phe His Asp Asn Gly Ile Glu Ile Arg Ser Ile Lys Thr Gly Glu
            260             265                 270

Leu Leu Gln Glu Leu Ala Asp Arg Lys Thr Arg Lys Ile Arg Leu Leu
        275             280                 285

Gly Ser Ser Asp Arg Lys Ile Leu Leu Ser Ser Ser Pro
```

217

<210> 74
<211> 256
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Protein kinase
      domain Consensus Sequence

<400> 74
Tyr Glu Leu Gly Glu Lys Leu Gly Ser Gly Ala Phe Gly Lys Val Tyr
 1   5   10   15

Lys Gly Lys His Lys Asp Thr Gly Glu Ile Val Ala Ile Lys Ile Leu
            20   25   30

Lys Lys Arg Ser Leu Ser Glu Lys Lys Arg Phe Leu Arg Glu Ile
            35   40   45

Gln Ile Leu Arg Arg Leu Ser His Pro Asn Ile Val Arg Leu Leu Gly
    50   55   60

Val Phe Glu Glu Asp Asp His Leu Tyr Leu Val Met Glu Tyr Met Glu
65   70   75   80

Gly Gly Asp Leu Phe Asp Tyr Leu Arg Arg Asn Gly Leu Leu Leu Ser
            85   90   95

Glu Lys Glu Ala Lys Lys Ile Ala Leu Gln Ile Leu Arg Gly Leu Glu
            100   105   110

Tyr Leu His Ser Arg Gly Ile Val His Arg Asp Leu Lys Pro Glu Asn
        115   120   125

Ile Leu Leu Asp Glu Asn Gly Thr Val Lys Ile Ala Asp Phe Gly Leu
    130   135   140

Ala Arg Lys Leu Glu Ser Ser Ser Tyr Glu Lys Leu Thr Thr Phe Val
145   150   155   160

Gly Thr Pro Glu Tyr Met Ala Pro Glu Val Leu Glu Gly Arg Gly Tyr
                165   170   175

Ser Ser Lys Val Asp Val Trp Ser Leu Gly Val Ile Leu Tyr Glu Leu
            180   185   190

Leu Thr Gly Lys Leu Pro Phe Pro Gly Ile Asp Pro Leu Glu Glu Leu
        195   200   205

Phe Arg Ile Lys Glu Arg Pro Arg Leu Arg Leu Pro Leu Pro Pro Asn
    210   215   220

Cys Ser Glu Glu Leu Lys Asp Leu Ile Lys Lys Cys Leu Asn Lys Asp
225   230   235   240

```
Pro Glu Lys Arg Pro Thr Ala Lys Glu Ile Leu Asn His Pro Trp Phe
            245                 250                 255




<210> 75
<211> 258
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Tyrosine
      Kinase Consensus Sequence

<400> 75
Leu Thr Leu Gly Lys Lys Leu Gly Glu Gly Ala Phe Gly Glu Val Tyr
 1               5                  10                  15

Lys Gly Thr Leu Lys Gly Lys Gly Gly Val Glu Val Glu Val Ala Val
            20                  25                  30

Lys Thr Leu Lys Glu Asp Ala Ser Glu Gln Gln Ile Glu Glu Phe Leu
        35                  40                  45

Arg Glu Ala Arg Leu Met Arg Lys Leu Asp His Pro Asn Ile Val Lys
    50                  55                  60

Leu Leu Gly Val Cys Thr Glu Glu Glu Pro Leu Met Ile Val Met Glu
 65                  70                  75                  80

Tyr Met Glu Gly Gly Asp Leu Leu Asp Tyr Leu Arg Lys Asn Arg Pro
                85                  90                  95

Lys Glu Leu Ser Leu Ser Asp Leu Leu Ser Phe Ala Leu Gln Ile Ala
            100                 105                 110

Arg Gly Met Glu Tyr Leu Glu Ser Lys Asn Phe Val His Arg Asp Leu
            115                 120                 125

Ala Ala Arg Asn Cys Leu Val Gly Glu Asn Lys Thr Val Lys Ile Ala
    130                 135                 140

Asp Phe Gly Leu Ala Arg Asp Leu Tyr Asp Asp Asp Tyr Tyr Arg Lys
145                 150                 155                 160

Lys Lys Ser Pro Arg Leu Pro Ile Arg Trp Met Ala Pro Glu Ser Leu
            165                 170                 175

Lys Asp Gly Lys Phe Thr Ser Lys Ser Asp Val Trp Ser Phe Gly Val
            180                 185                 190

Leu Leu Trp Glu Ile Phe Thr Leu Gly Glu Ser Pro Tyr Pro Gly Met
        195                 200                 205


                              219
```

```
Ser Asn Glu Glu Val Leu Glu Tyr Leu Lys Lys Gly Tyr Arg Leu Pro
    210             215             220

Gln Pro Pro Asn Cys Pro Asp Glu Ile Tyr Asp Leu Met Leu Gln Cys
225             230             235             240

Trp Ala Glu Asp Pro Glu Asp Arg Pro Thr Phe Ser Glu Leu Val Glu
            245             250             255

Arg Leu
```

<210> 76
<211> 430
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Sema domain
      Consensus Sequence

<400> 76
```
Leu Gln Asn Leu Leu Leu Asp Glu Asp Asn Gly Thr Leu Tyr Val Gly
  1           5               10                  15

Ala Arg Asn Arg Leu Tyr Val Leu Ser Leu Asn Leu Ile Ser Glu Ala
            20              25                  30

Glu Val Lys Thr Gly Pro Val Leu Ser Ser Pro Asp Cys Glu Glu Cys
        35              40                  45

Val Ser Lys Gly Lys Asp Pro Pro Thr Asp Cys Val Asn Phe Ile Arg
    50              55                  60

Leu Leu Leu Asp Tyr Asn Ala Asp His Leu Leu Val Cys Gly Thr Asn
 65             70              75                  80

Ala Phe Gln Pro Val Cys Arg Leu Ile Asn Leu Gly Asn Leu Asp Arg
            85              90                  95

Leu Glu Val Gly Arg Glu Ser Gly Arg Gly Arg Cys Pro Phe Asp Pro
            100             105             110

Gln His Asn Ser Thr Ala Val Leu Val Asp Gly Glu Leu Tyr Val Gly
            115             120             125

Thr Val Ala Asp Phe Ser Gly Ser Asp Pro Ala Ile Tyr Arg Ser Leu
    130             135             140

Ser Val Arg Arg Leu Lys Gly Thr Ser Gly Pro Ser Leu Arg Thr Val
145             150             155             160

Leu Tyr Asp Ser Arg Trp Leu Asn Glu Pro Asn Phe Val Tyr Ala Phe
            165             170             175

Glu Ser Gly Asp Phe Val Tyr Phe Phe Phe Arg Glu Thr Ala Val Glu
```

```
         180                    185                      190
Asp Glu Asn Cys Gly Lys Ala Val Val Ser Arg Val Ala Arg Val Cys
        195                 200                 205

Lys Asn Asp Val Gly Gly Pro Arg Ser Leu Ser Lys Lys Trp Thr Ser
        210                 215                 220

Phe Leu Lys Ala Arg Leu Glu Cys Ser Val Pro Gly Glu Phe Pro Phe
225                 230                 235                 240

Tyr Phe Asn Glu Leu Gln Ala Ala Phe Leu Leu Pro Ala Gly Ser Glu
                245                 250                 255

Ser Asp Asp Val Leu Tyr Gly Val Phe Ser Thr Ser Ser Asn Pro Ile
        260                 265                 270

Pro Gly Ser Ala Val Cys Ala Phe Ser Leu Ser Asp Ile Asn Ala Val
        275                 280                 285

Phe Asn Glu Pro Phe Lys Glu Cys Glu Thr Gly Asn Ser Gln Trp Leu
        290                 295                 300

Pro Tyr Pro Arg Gly Leu Val Pro Phe Pro Arg Pro Gly Thr Cys Pro
305                 310                 315                 320

Asn Thr Pro Leu Ser Ser Lys Asp Leu Pro Asp Asp Val Leu Asn Phe
                325                 330                 335

Ile Lys Thr His Pro Leu Met Asp Glu Val Val Gln Pro Leu Thr Gly
                340                 345                 350

Arg Pro Leu Phe Val Lys Thr Asp Ser Asn Tyr Leu Leu Thr Ser Ile
        355                 360                 365

Ala Val Asp Arg Val Arg Thr Asp Gly Gly Asn Tyr Thr Val Leu Phe
        370                 375                 380

Leu Gly Thr Ser Asp Gly Arg Ile Leu Lys Val Val Leu Ser Arg Ser
385                 390                 395                 400

Ser Ser Ser Ser Glu Ser Val Val Leu Glu Glu Ile Ser Val Phe Asp
                405                 410                 415

Pro Gly Ser Pro Val Ser Asp Leu Val Leu Ser Pro Lys Lys
        420                 425                 430


<210> 77
<211> 433
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Sema domain
      Consensus Sequence
```

<400> 77

```
Phe Val Thr Leu Leu Leu Asp Glu Asp Arg Gly Arg Leu Tyr Val Gly
 1               5                  10                  15

Ala Arg Asn Arg Val Tyr Val Leu Asn Leu Glu Asp Leu Ser Glu Val
            20              25                  30

Leu Asn Leu Lys Thr Gly Trp Pro Gly Ser Cys Glu Thr Cys Glu Glu
        35              40                  45

Cys Asn Met Lys Gly Lys Ser Pro Leu Thr Glu Cys Thr Asn Phe Ile
    50                  55                  60

Arg Val Leu Gln Ala Tyr Asn Asp Thr His Leu Tyr Val Cys Gly Thr
65              70                  75                      80

Asn Ala Phe Gln Pro Val Cys Thr Leu Ile Asn Leu Gly Asp Leu Phe
            85                  90                  95

Ser Leu Asp Val Asp Asn Glu Glu Asp Gly Cys Gly Asp Cys Pro Tyr
            100                 105                 110

Asp Pro Leu Gly Asn Thr Thr Ser Val Leu Val Gln Gly Gly Glu Leu
        115                 120                 125

Tyr Ser Gly Thr Val Ile Asp Phe Ser Gly Arg Asp Pro Ser Ile Arg
    130                 135                 140

Arg Leu Leu Gly Ser His Asp Gly Leu Arg Thr Glu Phe His Asp Ser
145             150                 155                 160

Lys Trp Leu Asn Leu Pro Asn Phe Val Asp Ser Tyr Pro Ile His Tyr
            165                 170                 175

Val His Ser Phe Ser Asp Asp Lys Val Tyr Phe Phe Phe Arg Glu Thr
            180                 185                 190

Ala Val Glu Asp Ser Asn Cys Lys Thr Ile His Ser Arg Val Ala Arg
        195                 200                 205

Val Cys Lys Asn Asp Pro Gly Gly Arg Ser Tyr Leu Glu Leu Asn Lys
    210                 215                 220

Trp Thr Thr Phe Leu Lys Ala Arg Leu Asn Cys Ser Ile Pro Gly Glu
225             230                 235                 240

Gly Thr Pro Phe Tyr Phe Asn Glu Leu Gln Ala Ala Phe Val Leu Pro
            245                 250                 255

Thr Gly Ala Asp Thr Asp Pro Val Leu Tyr Gly Val Phe Thr Thr Ser
            260                 265                 270

Ser Asn Ser Ser Ala Gly Ser Ala Val Cys Ala Phe Ser Met Ser Asp
    275                 280                 285

Ile Asn Gln Val Phe Glu Gly Pro Phe Lys His Gln Ser Pro Asn Ser
    290                 295                 300
```

222

Lys Trp Leu Pro Tyr Arg Gly Lys Val Pro Gln Pro Arg Pro Gly Gln
305   310   315   320

Cys Pro Asn Ala Ser Gly Leu Asn Leu Pro Asp Asp Thr Leu Asn Phe
                325   330   335

Ile Arg Cys His Pro Leu Met Asp Glu Val Val Pro Pro Leu His Asn
            340   345   350

Val Pro Leu Phe Val Gly Gln Ser Gly Asn Tyr Arg Leu Thr Ser Ile
        355   360   365

Ala Val Asp Arg Val Arg Ala Gly Asp Gly Gln Ile Tyr Thr Val Leu
    370   375   380

Phe Leu Gly Thr Asp Asp Gly Arg Val Leu Lys Gln Val Val Leu Ser
385   390   395   400

Arg Ser Ser Ser Ala Ser Tyr Leu Val Val Val Leu Glu Glu Ser Leu
                405   410   415

Val Phe Pro Asp Gly Glu Pro Val Gln Arg Met Val Ile Ser Ser Lys
            420   425   430

Asn

<210> 78
<211> 85
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: TIG domain
      Consensus Sequence

<400> 78
Pro Val Ile Thr Ser Ile Ser Pro Ser Ser Gly Pro Leu Ser Gly Gly
  1   5   10   15

Thr Glu Ile Thr Ile Thr Gly Ser Asn Leu Gly Ser Gly Glu Asp Ile
                20   25   30

Lys Val Thr Phe Gly Gly Thr Glu Cys Asp Val Val Ser Gln Glu Ala
            35   40   45

Ser Gln Ile Val Cys Lys Thr Pro Pro Tyr Ala Asn Gly Gly Pro Gln
    50   55   60

Pro Val Thr Val Ser Leu Asp Gly Gly Gly Leu Ser Ser Ser Pro Val
 65   70   75   80

Thr Phe Thr Tyr Val
                85

<210> 79
<211> 85
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: TIG Consensus
      Sequence

<400> 79
Pro Val Ile Thr Ser Ile Ser Pro Ser Ser Gly Pro Leu Ser Gly Gly
 1   5   10   15

Thr Glu Ile Thr Ile Thr Gly Ser Asn Leu Gly Ser Gly Glu Asp Ile
            20   25   30

Lys Val Thr Phe Gly Gly Thr Glu Cys Asp Val Val Ser Gln Glu Ala
        35   40   45

Ser Gln Ile Val Cys Lys Thr Pro Pro Tyr Ala Asn Gly Gly Pro Gln
    50   55   60

Pro Val Thr Val Ser Leu Asp Gly Gly Gly Leu Ser Ser Ser Pro Val
65   70   75   80

Thr Phe Thr Tyr Val
                85

<210> 80
<211> 85
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: TIG Consensus
      Sequence

<400> 80
Pro Val Ile Thr Ser Ile Ser Pro Ser Ser Gly Pro Leu Ser Gly Gly
 1   5   10   15

Thr Glu Ile Thr Ile Thr Gly Ser Asn Leu Gly Ser Gly Glu Asp Ile
            20   25   30

Lys Val Thr Phe Gly Gly Thr Glu Cys Asp Val Val Ser Gln Glu Ala
        35   40   45

Ser Gln Ile Val Cys Lys Thr Pro Pro Tyr Ala Asn Gly Gly Pro Gln
    50   55   60

Pro Val Thr Val Ser Leu Asp Gly Gly Gly Leu Ser Ser Ser Pro Val
65   70   75   80

Thr Phe Thr Tyr Val
                85

<210> 81
<211> 47
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PSI domain
      Consensus Sequence

<400> 81
Arg Cys Ser Ala Tyr Thr Ser Cys Ser Glu Cys Leu Leu Ala Arg Asp
 1   5   10   15

Pro Tyr Cys Ala Trp Cys Ser Ser Gln Gly Arg Cys Thr Ser Gly Glu
             20   25   30

Arg Cys Asp Ser Leu Arg Gln Asn Trp Ser Ser Gly Gln Cys Pro
         35   40   45

<210> 82
<211> 93
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: IPT Consensus
      Sequence

<400> 82
Asp Pro Val Ile Thr Arg Ile Ser Pro Asn Ser Gly Pro Leu Ser Gly
 1   5   10   15

Gly Thr Arg Ile Thr Leu Cys Gly Lys Asn Leu Asp Ser Ile Ser Val
             20   25   30

Val Phe Val Glu Val Gly Val Gly Glu Val Pro Cys Thr Phe Leu Pro
         35   40   45

Ser Asp Val Ser Gln Thr Ala Ile Val Cys Lys Thr Pro Pro Tyr His
     50   55   60

Asn Ile Pro Gly Ser Val Pro Val Arg Val Glu Val Gly Leu Arg Asn
 65   70   75   80

Gly Gly Val Pro Gly Glu Pro Ser Pro Phe Thr Tyr Val
                 85   90

<210> 83
<211> 254
<212> PRT
<213> Artificial Sequence

<220>

225

<223> Description of Artificial Sequence: 7
      transmembrane receptor Consensus Sequence

<400> 83
Gly Asn Leu Leu Val Ile Leu Val Ile Leu Arg Thr Lys Lys Leu Arg
 1   5   10   15

Thr Pro Thr Asn Ile Phe Leu Leu Asn Leu Ala Val Ala Asp Leu Leu
            20   25   30

Phe Leu Leu Thr Leu Pro Pro Trp Ala Leu Tyr Tyr Leu Val Gly Gly
        35   40   45

Asp Trp Val Phe Gly Asp Ala Leu Cys Lys Leu Val Gly Ala Leu Phe
    50   55   60

Val Val Asn Gly Tyr Ala Ser Ile Leu Leu Leu Thr Ala Ile Ser Ile
65   70   75   80

Asp Arg Tyr Leu Ala Ile Val His Pro Leu Arg Tyr Arg Arg Ile Arg
                85   90   95

Thr Pro Arg Arg Ala Lys Val Leu Ile Leu Leu Val Trp Val Leu Ala
            100   105   110

Leu Leu Leu Ser Leu Pro Pro Leu Leu Phe Ser Trp Leu Arg Thr Val
        115   120   125

Glu Glu Gly Asn Thr Thr Val Cys Leu Ile Asp Phe Pro Glu Glu Ser
    130   135   140

Val Lys Arg Ser Tyr Val Leu Leu Ser Thr Leu Val Gly Phe Val Leu
145   150   155   160

Pro Leu Leu Val Ile Leu Val Cys Tyr Thr Arg Ile Leu Arg Thr Leu
            165   170   175

Arg Lys Arg Ala Arg Ser Gln Arg Ser Leu Lys Arg Arg Ser Ser Ser
            180   185   190

Glu Arg Lys Ala Ala Lys Met Leu Leu Val Val Val Val Val Phe Val
        195   200   205

Leu Cys Trp Leu Pro Tyr His Ile Val Leu Leu Leu Asp Ser Leu Cys
    210   215   220

Leu Leu Ser Ile Trp Arg Val Leu Pro Thr Ala Leu Leu Ile Thr Leu
225   230   235   240

Trp Leu Ala Tyr Val Asn Ser Cys Leu Asn Pro Ile Ile Tyr
                245   250

<210> 84
<211> 402
<212> PRT
<213> Artificial Sequence

226

<220>
<223> Description of Artificial Sequence: ANF receptor
      Consensus Sequence

<400> 84
Gly Leu Ile Asn Tyr Ala Val Arg Gly Ile Thr Arg Leu Glu Ala Met
 1   5   10   15

Leu Gly Ala Phe Asp Arg Ile Asn Ala Asp Pro Ala Leu Leu Pro Gly
            20   25   30

Leu Ala Leu Gly Leu Ala Ile Leu Asp Ile Asn Ser Leu Arg Asn Val
            35   40   45

Ala Leu Glu Gln Ser Phe Thr Phe Val Tyr Gly Leu Leu Ile Lys Cys
    50   55   60

Asp Cys Ser Ser Val Arg Cys Ala Gly Gly Asp Leu Ala Leu Thr His
65   70   75   80

Gly Val Ala Gly Val Ile Gly Pro Ser Cys Ser Ser Ser Ala Ile Gln
                85   90   95

Val Ala Asn Leu Ala Ser Leu Leu Asn Ile Pro Met Ile Ser Tyr Gly
            100   105   110

Ser Thr Ala Pro Glu Leu Ser Asp Lys Thr Arg Tyr Pro Thr Phe Ser
            115   120   125

Arg Thr Ile Pro Ser Asp Ala Phe Gln Gly Leu Ala Met Val Asp Ile
    130   135   140

Phe Lys His Phe Asn Trp Asn Tyr Val Ser Val Val Tyr Ser Asp Gly
145   150   155   160

Thr Tyr Gly Glu Glu Gly Cys Glu Ala Phe Ile Glu Ala Leu Arg Ala
                165   170   175

Arg Gly Gly Cys Ile Ala Leu Ser Val Lys Ile Gly Glu Phe Asp Arg
            180   185   190

Gly Asp Glu Glu Asp Phe Asp Lys Leu Leu Arg Glu Leu Lys Arg Arg
            195   200   205

Ala Arg Val Val Val Met Cys Gly His Gly Glu Thr Leu Arg Glu Leu
    210   215   220

Leu Glu Ala Ala Leu Arg Leu Gly Leu Thr Gly Glu Asp Tyr Val Phe
225   230   235   240

Ile Ser Asp Asp Leu Phe Asn Lys Ser Leu Pro Ala Glu Pro Gly Ala
            245   250   255

Pro Gly Ala Ile Glu Leu Ala Asn Ala Ser Met Leu Arg Phe Ala Tyr
            260   265   270

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Tyr Phe Val Leu Val Leu Thr Leu Asn Asn Pro Arg Asn Pro Trp Phe
        275   280   285

Leu Glu Phe Trp Lys Glu Asn Phe Ile Cys Ala Leu Gln Asp Phe Leu
        290   295   300

Thr Leu Glu Pro Tyr Glu Gln Glu Gly Lys Ala Gly Phe Val Tyr Asp
305   310   315   320

Ala Val Tyr Leu Tyr Ala His Ala Leu His Asn Thr Thr Leu Ala Leu
                325   330   335

Gly Gly Ser Trp Val Asp Gly Glu Lys Leu Val Gln His Leu Arg Asn
            340   345   350

Leu Thr Phe Glu Gly Val Thr Gly Pro Val Thr Phe Asp Glu Asn Gly
        355   360   365

Asp Arg Asp Gly Asp Tyr Val Leu Leu Asp Thr Gln Asn Thr Glu Thr
    370   375   380

Gly Gln Leu Lys Val Thr Gly Thr Tyr Asp Gly Val Gly Lys Trp Thr
385   390   395   400

Glu Pro

<210> 85
<211> 256
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: 7
      transmembrane receptor (metabotrobic E family)
      Consensus Sequence

<400> 85
Leu Gly Ile Val Leu Val Ala Leu Ala Val Leu Gly Ile Val Leu Thr
  1   5   10   15

Leu Phe Val Leu Val Val Phe Val Lys His Arg Asp Thr Pro Ile Val
            20   25   30

Lys Ala Ser Asn Arg Glu Leu Ser Tyr Leu Leu Leu Ile Gly Leu Ile
            35   40   45

Leu Cys Tyr Leu Cys Ser Phe Leu Phe Ile Gly Lys Pro Ser Glu Thr
    50   55   60

Ser Cys Ile Leu Arg Arg Ile Leu Phe Gly Leu Gly Phe Thr Leu Cys
65   70   75   80

Tyr Ser Ala Leu Leu Ala Lys Thr Asn Arg Val Leu Arg Ile Phe Arg
                85   90   95

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Ala Lys Lys Pro Gly Ser Gly Lys Pro Lys Phe Ile Ser Pro Trp Ala
            100   105   110

Gln Val Leu Ile Val Leu Ile Leu Val Leu Ile Gln Val Ile Ile Cys
            115   120   125

Val Ile Trp Leu Val Val Glu Pro Pro Arg Pro Thr Ile Asp Ile Tyr
    130   135   140

Ser Glu Lys Glu Lys Ile Ile Leu Glu Cys Asn Lys Gly Ser Met Val
145   150   155   160

Ala Phe Val Val Val Leu Gly Tyr Asp Gly Leu Leu Ala Val Leu Cys
            165   170   175

Thr Phe Leu Ala Phe Leu Thr Arg Asn Leu Pro Glu Asn Phe Asn Glu
            180   185   190

Ala Lys Phe Ile Gly Phe Ser Met Leu Thr Phe Cys Ile Val Trp Val
            195   200   205

Ala Phe Ile Pro Ile Tyr Leu Ser Thr Pro Gly Lys Val Gln Val Ala
    210   215   220

Val Glu Ile Phe Ser Ile Leu Ala Ser Ser Thr Val Leu Leu Gly Cys
225   230   235   240

Leu Phe Val Pro Lys Cys Tyr Ile Ile Leu Phe Arg Pro Glu Lys Asn
            245   250   255

<210> 86
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PDZ domain
      Consensus Sequence

<400> 86
Glu Pro Arg Leu Val Glu Leu Glu Lys Gly Gly Gly Gly Leu Gly Phe
  1   5   10   15

Ser Leu Val Gly Gly Lys Asp Ser Gly Asp Gly Gly Val Val Val Ser
            20   25   30

Ser Val Val Pro Gly Ser Pro Ala Ala Lys Ala Gly Leu Lys Pro Gly
            35   40   45

Asp Val Ile Leu Glu Val Asn Gly Thr Ser Val Glu Gly Leu Thr His
    50   55   60

Leu Glu Ala Val Asp Leu Leu Lys Glu Ala Gly Gly Lys Val Thr Leu

Thr Val Leu Arg Gly Gly
                    85

<210> 87
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: NOV1c Primer 1

<400> 87
tcatcacatg acaacatgaa gctgt   25

<210> 88
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: NOV1c Primer 2

<400> 88
gaaagccctc aaactctcca tctatg   26

<210> 89
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: NOV7a Primer 1

<400> 89
ccaatctctg atgccctgcg at   22

<210> 90
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: NOV7a Primer 2

<400> 90
aggtcagtgc cggagcctcc   20

<210> 91
<211> 19
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag273b Forward

<400> 91
cggcttgacg atgcttcac   19

<210> 92
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag273b Probe

<400> 92
tgacttttct gggcttacca atgctatttc aa   32

<210> 93
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag273b Reverse

<400> 93
gcacctatct caatatctgc aatattg   27

<210> 94
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1094 Forward

<400> 94
atggactgga aaacctggaa   20

<210> 95
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1094 Probe

<400> 95
tcctgcaagc agataacaat tttatcaca   29

<210> 96
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1094 Reverse

<400> 96
tgctaaaggc acttggttca   20

<210> 97
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag2100 Forward

<400> 97
agatccctgg aacagaggat t   21

<210> 98
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag2100 Probe

<400> 98
tgtctgaagc caataaactt gcagca   26

<210> 99
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag2100 Reverse

<400> 99
ccttcatgtt cctttgggta a   21

<210> 100
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag217 Forward

<400> 100

atctgtgctg aggcatgttc ct   22

<210> 101
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag217 Probe

<400> 101
atcctcctcc ctccccggct ctc   23

<210> 102
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag217 Reverse

<400> 102
ctgcatggct ggtgtgatg   19

<210> 103
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag850 Forward

<400> 103
cctttcttct cttcctcctc aa   22

<210> 104
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag850 Probe

<400> 104
cacctggcga gtgctcctct ctg   23

<210> 105
<211> 19
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ag850 Reverse

<400> 105
ggtggatggc gttgtagag   19

<210> 106
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1469 Forward

<400> 106
cgtacgtctt ccatgatgag tt   22

<210> 107
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1469 Probe

<400> 107
cgtggcctcg atgattaaga tccctt   26

<210> 108
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1469 Reverse

<400> 108
aagtcaggga tgatggtgaa g   21

<210> 109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag2976 Forward

<400> 109
accccaaatg gattccatta   20

<210> 110
<211> 26
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag2976 Probe

<400> 110
ccctcatgga tctgcataac cacaca   26

<210> 111
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag2976 Reverse

<400> 111
cttgtgtgtg catgcttgtc   20

<210> 112
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag760 Forward

<400> 112
caccatgaca acgacaccta ta   22

<210> 113
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag760 Probe

<400> 113
atatggcacc aacatcacat gcacg   25

<210> 114
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag760 Reverse

<400> 114
tgggtagaaa gtgtgtgtga aa   22

<210> 115
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1537 Forward

<400> 115
aaggagctgg aagagaagaa ga   22

<210> 116
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1537 Probe

<400> 116
atcagaaact cagccctgga cacctg   26

<210> 117
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag1537 Reverse

<400> 117
gctgcgactt ggtcttgat   19

<210> 118
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag147 Forward

<400> 118
tgaagacagc acctccctat ca   22

<210> 119
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag147 Probe

<400> 119

236

cggctccgtg ctgtcaccca g   21

<210> 120
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag147 Reverse

<400> 120
aagaatcctc agcatcgcca ta   .   22

<210> 121
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag718 Forward

<400> 121
agaaggaatc tctgggaaag ct   22

<210> 122
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:-Ag718 Probe

<400> 122
ccactggaga tgcttgtgtc tctacca   27

<210> 123
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag718 Reverse

<400> 123
gacagagcac tggctagttc ac   22

<210> 124
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ag3681/Ag4085
      Forward

<400> 124
gaatcatcca caagtcatcc at   22

<210> 125
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag3681/Ag4085
      Probe

<400> 125
ctcactccca tctcatgcct cccag   25

<210> 126
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ag3681/Ag4085
      Reverse

<400> 126
catgctgaat gatcgtgaca   20

<210> 127
<211> 1011
<212> PRT
<213> Homo sapiens

<400> 127
Ile Ser Asn Ser Ser Asp Thr Val Glu Cys Glu Cys Ser Glu Asn Trp
 1   5   10   15

Lys Gly Glu Ala Cys Asp Ile Pro His Cys Thr Asp Asn Cys Gly Phe
            20   25   30

Pro His Arg Gly Ile Cys Asn Ser Ser Asp Val Arg Gly Cys Ser Cys
        35   40   45

Phe Ser Asp Trp Gln Gly Pro Gly Cys Ser Val Pro Val Pro Ala Asn
    50   55   60

Gln Ser Phe Trp Thr Arg Glu Glu Tyr Ser Asn Leu Lys Leu Pro Arg
65   70   75   80

Ala Ser His Lys Ala Val Val Asn Gly Asn Ile Met Trp Val Val Gly
                85   90   95

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Gly Tyr Met Phe Asn His Ser Asp Tyr Asn Met Val Leu Ala Tyr Asp
        100             105             110

Leu Ala Ser Arg Glu Trp Leu Pro Leu Asn Arg Ser Val Asn Asn Val
        115             120             125

Val Val Arg Tyr Gly His Ser Leu Ala Leu Tyr Lys Asp Lys Ile Tyr
    130             135             140

Met Tyr Gly Gly Lys Ile Asp Ser Thr Gly Asn Val Thr Asn Glu Leu
145             150             155             160

Arg Val Phe His Ile His Asn Glu Ser Trp Val Leu Leu Thr Pro Lys
            165             170             175

Ala Lys Glu Gln Tyr Ala Val Val Gly His Ser Ala His Ile Val Thr
        180             185             190

Leu Lys Asn Gly Arg Val Val Met Leu Val Ile Phe Gly His Cys Pro
        195             200             205

Leu Tyr Gly Tyr Ile Ser Asn Val Gln Glu Tyr Asp Leu Asp Lys Asn
    210             215             220

Thr Trp Ser Ile Leu His Thr Gln Gly Ala Leu Val Gln Gly Gly Tyr
225             230             235             240

Gly His Ser Ser Val Tyr Asp His Arg Thr Arg Ala Leu Tyr Val His
            245             250             255

Gly Gly Tyr Lys Ala Phe Ser Ala Asn Lys Tyr Arg Leu Ala Asp Asp
        260             265             270

Leu Tyr Arg Tyr Asp Val Asp Thr Gln Met Trp Thr Ile Leu Lys Asp
    275             280             285

Ser Arg Phe Phe Arg Tyr Leu His Thr Ala Val Ile Val Ser Gly Thr
    290             295             300

Met Leu Val Phe Gly Gly Asn Thr His Asn Asp Thr Ser Met Ser His
305             310             315             320

Gly Ala Lys Cys Phe Ser Ser Asp Phe Met Ala Tyr Asp Ile Ala Cys
            325             330             335

Asp Arg Trp Ser Val Leu Pro Arg Pro Asp Leu His His Asp Val Asn
            340             345             350

Arg Phe Gly His Ser Ala Val Leu His Asn Ser Thr Met Tyr Val Phe
        355             360             365

Gly Gly Phe Asn Ser Leu Leu Leu Ser Asp Ile Leu Val Phe Thr Ser
    370             375             380

Glu Gln Cys Asp Ala His Arg Ser Glu Ala Ala Cys Leu Ala Ala Gly
385             390             395             400
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Pro Gly Ile Arg Cys Val Trp Asn Thr Gly Ser Ser Gln Cys Ile Ser
                405   410   415

Trp Ala Leu Ala Thr Asp Glu Gln Glu Glu Lys Leu Lys Ser Glu Cys
            420   425   430

Phe Ser Lys Arg Thr Leu Asp His Asp Arg Cys Asp Gln His Thr Asp
        435   440   445

Cys Tyr Ser Cys Thr Ala Asn Thr Asn Asp Cys His Trp Cys Asn Asp
    450   455   460

His Cys Val Pro Arg Asn His Ser Cys Ser Glu Gly Gln Ile Ser Ile
465   470   475   480

Phe Arg Tyr Glu Asn Cys Pro Lys Asp Asn Pro Met Tyr Tyr Cys Asn
            485   490   495

Lys Lys Thr Ser Cys Arg Ser Cys Ala Leu Asp Gln Asn Cys Gln Trp
        500   505   510

Glu Pro Arg Asn Gln Glu Cys Ile Ala Leu Pro Glu Asn Ile Cys Gly
        515   520   525

Ile Gly Trp His Leu Val Gly Asn Ser Cys Leu Lys Ile Thr Thr Ala
    530   535   540

Lys Glu Asn Tyr Asp Asn Ala Lys Leu Phe Cys Arg Asn His Asn Ala
545   550   555   560

Leu Leu Ala Ser Leu Thr Thr Gln Lys Lys Val Glu Phe Val Leu Lys
            565   570   575

Gln Leu Arg Ile Met Gln Ser Ser Gln Ser Met Ser Lys Leu Thr Leu
        580   585   590

Thr Pro Trp Val Gly Leu Arg Lys Ile Asn Val Ser Tyr Trp Cys Trp
        595   600   605

Glu Asp Met Ser Pro Phe Thr Asn Ser Leu Leu Gln Trp Met Pro Ser
    610   615   620

Glu Pro Ser Asp Ala Gly Phe Cys Gly Ile Leu Ser Glu Pro Ser Thr
625   630   635   640

Arg Gly Leu Lys Ala Ala Thr Cys Ile Asn Pro Leu Asn Gly Ser Val
            645   650   655

Cys Glu Arg Pro Ala Asn His Ser Ala Lys Gln Cys Arg Thr Pro Cys
        660   665   670

Ala Leu Arg Thr Ala Cys Gly Asp Cys Thr Ser Gly Ser Ser Glu Cys
        675   680   685

Met Trp Cys Ser Asn Met Lys Gln Cys Val Asp Ser Asn Ala Tyr Val
    690   695   700

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```
Ala Ser Phe Pro Phe Gly Gln Cys Met Glu Trp Tyr Thr Met Ser Thr
705             710             715                     720

Cys Pro Pro Glu Asn Cys Ser Gly Tyr Cys Thr Cys Ser His Cys Leu
                725             730             735

Glu Gln Pro Gly Cys Gly Trp Cys Thr Asp Pro Ser Asn Thr Gly Lys
            740             745             750

Gly Lys Cys Ile Glu Gly Ser Tyr Lys Gly Pro Val Lys Met Pro Ser
        755             760             765

Gln Ala Pro Thr Gly Asn Phe Tyr Pro Gln Pro Leu Leu Asn Ser Ser
    770             775             780

Met Cys Leu Glu Asp Ser Arg Tyr Asn Trp Ser Phe Ile His Cys Pro
785             790             795                     800

Ala Cys Gln Cys Asn Gly His Ser Lys Cys Ile Asn Gln Ser Ile Cys
                805             810             815

Glu Lys Cys Glu Asn Leu Thr Thr Gly Lys His Cys Glu Thr Cys Ile
            820             825             830

Ser Gly Phe Tyr Gly Asp Pro Thr Asn Gly Gly Lys Cys Gln Pro Cys
        835             840             845

Lys Cys Asn Gly His Ala Ser Leu Cys Asn Thr Asn Thr Gly Lys Cys
    850             855             860

Phe Cys Thr Thr Lys Gly Val Lys Gly Asp Glu Cys Gln Leu Cys Glu
865             870             875             ,       880

Val Glu Asn Arg Tyr Gln Gly Asn Pro Leu Arg Gly Thr Cys Tyr Tyr
            885             890             895

Thr Leu Leu Ile Asp Tyr Gln Phe Thr Phe Ser Leu Ser Gln Glu Asp
        900             905             910

Asp Arg Tyr Tyr Thr Ala Ile Asn Phe Val Ala Thr Pro Asp Glu Gln
    915             920             925

Asn Arg Asp Leu Asp Met Phe Ile Asn Ala Ser Lys Asn Phe Asn Leu
    930             935             940

Asn Ile Thr Trp Ala Ala Ser Phe Ser Ala Gly Thr Gln Ala Gly Glu
945             950             955             960

Glu Met Pro Val Val Ser Lys Thr Asn Ile Lys Glu Tyr Lys Asp Ser
            965             970             975

Phe Ser Asn Glu Lys Phe Asp Phe Arg Asn His Pro Asn Ile Thr Phe
        980             985             990

Phe Val Tyr Val Ser Asn Phe Thr Trp Pro Ile Lys Ile Gln Val Gln
        995             1000            1005
```

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Thr Glu Gln
1010